

BUTANE-PROPANE

News

Headquarters for L.P. gas Information Since 1931

NOVEMBER, 1953

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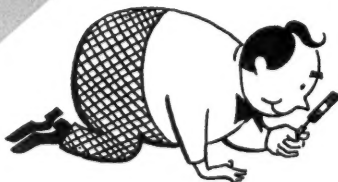
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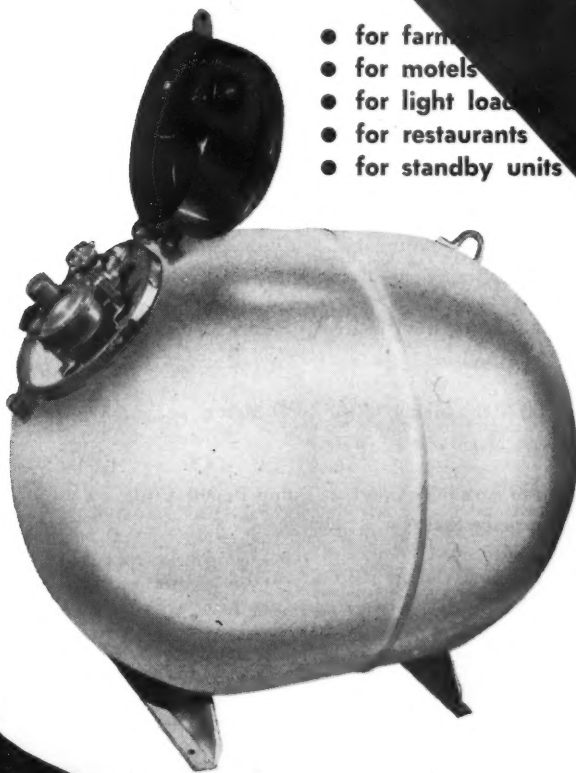
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- for restaurants
- for standby units



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NOVEMBER 1953

BUTANE-PROPANE

NBP

News

VOLUME 15 • NUMBER 11

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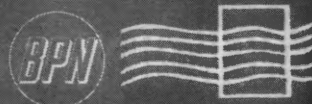
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LETTERS



Headquarters

for L.P. gas Information

Since 1931

North Carolina

I was very interested to read your "Editorial Comment" in the September "Butane-Propane News." For some five or six years I have been collecting newspaper clippings referring to fires, explosions and similar accidents of all kinds. I have particularly clipped items in which the word "gas" appeared but also have many others concerned with all types of accidents.

My reason for this little project was that I felt certain most reports of such accidents were inaccurate. Time and several hundred clippings verified my thinking. So many items contained the word "gas" in the heading and only by reading the entire article did the reader learn that perhaps gasoline, fuel oil vapors, chlorine or any one of several "gases" was involved. In our own town an explosion and fire was reported due to "leaking gas" when actually an oil furnace blew up.

So many persons are getting a distorted idea of the entire gas industry's safety record which—as we all know—is really quite good. This faulty picture is due largely to inaccurate reporting and a seemingly widespread belief that nothing will explode except the gas used in one's range, water heater, furnace or other appliance. I personally feel that in some cases there are deliberate attempts to discredit the L. P. gas dealer and natural and manufactured gas utilities.

As you so correctly state, most accidents are results of either carelessness or ignorance. The human machine seems to be the one which is subject to the majority of the failures.

All of us in the industry, whether LPG or utility, should certainly make every effort to see that the facts that reach the public in these instances are true and accurate. We feel badly enough about those accidents we do

have without "taking the rap" for oil explosions, gasoline fires, chlorine suffocations and, especially, explosions of electric water heaters and electrocutions.

RICHARD S. LEE,
Regional Manager,
Metrogas, Inc.

This is good advice to all LPG men. Concentrated effort in spreading accurate information will help to overcome ignorance and carelessness by reporters in covering fires and explosions.—Ed.

Quebec

Perhaps my request is not exactly along the groove intended by your advert, but I thought I'd write you for some advice anyway.

I am at present using propane gas to heat my house which has a convector-radiator hot water heating system, and I have my supply connected from four 100-lb. bottles mounted outside against my cellar wall. The bottles are connected two and two in parallel, with an automatic throw-over valve. When the pressure becomes too low in one set, the other two cut in.

In this northern part of Quebec, the temperatures very often go down around 20° below and stay there for days. I understand that propane gas has a tendency to freeze in the bottles at these sub-zero temperatures, with a consequent drop in evaporation pressure.

Under these conditions how can I be sure that the first two bottles are completely empty before having them replaced? I did toy with the idea of installing one or more 100-watt electric lights under the 8" x 2" planks on which the bottles are mounted and enclosing the whole set of bottles in a small insulated lean-to. Would this be a feasible and safe plan? The heat should be enough to keep the inside

of the housing at least 10° to 12° above that of outside temp.

Please advise, as I am a firm believer in propane for house heating purposes, although being new in this part of the country it is coming under a very severe crossfire of destructive criticism from all the other interests involved, including oil, coal, wood and electric power.

T.W.M.

It should not concern you that the oil, coal, wood or electric industries criticize you for using propane to heat your home. It is the modern, safe, clean and easily-controlled fuel for cooking, water heating and space heating in homes which are beyond the gas mains of the utilities serving towns and cities. These competitive fuels cannot match the desirable qualities of L. P. gas, and so they are worried and try to fight its use with untrue and unfounded stories and criticism.

You did not advise us of the heating load you have, but we assume it is near 100,000 Btu per hour. If it is different you can adjust up or down from the following.

Propane will not freeze in the bottles. The freezing point of propane is about 306° below zero. However, its boiling point is only 44° below zero, and if the temperature of the liquid is reduced to this low temperature it will no longer boil and produce vapor. Freezing is caused by moisture which may have entered the fuel in some manner.

Four cylinders manifolded together on each side should be adequate to supply your needs, even in the coldest weather. They should furnish fuel until they are practically empty. We do not believe it necessary to use any artificial heat, but it would probably be advantageous to enclose the tanks. Then some warmth coming through the wall of the house would reach them.—Ed.

Mexico

Will you kindly help us solve the following problem:

When there is a leakage in a butane cylinder, it becomes necessary to pass the butane from the bad cylinder to

NEW GENERAL *Supreme* WATER HEATER BEATS 'EM ALL!

Everdur

COPPER can't rust. Through the ages copper has proved to be the most durable material to contain water. The only quality which pure copper lacks is **tensile strength**.

EVERDUR is approximately 95% pure copper, hardened with silicon and manganese to give it **high tensile strength**.

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● If you're in the water heater business to make money you'll read **THIS** ad a **COUPLE** of times.

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The New General Supreme also is available with steel tank... heavy gauge, high quality steel tank, manufactured and galvanized in General's own plant. Everdur or steel, the new General Supreme conforms to the high standards which have made GENERAL the quality leader for three generations.



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an empty one by means of a hose with p.o.l. connections at both ends; however, the butane will not pass from one cylinder to the other without the loss of some butane, since the cylinder to which the butane is passed has to be disconnected from the hose once or twice and some gas let out before the butane from the bad cylinder is completely exhausted.

It has occurred to us that perhaps if the air from the empty cylinder to which the butane is to be passed from the bad one, is extracted by means of a compressor before doing the operation, it would facilitate matters; however, before trying this we would like to have your advice; probably you know of a better method. This advice would be of great help to us and to many other butane dealers here.

G.E.V.

Your idea of using the compressor to reduce the pressure in the cylinder into which the butane is being transferred is good. It can be done by closing the valves, disconnecting from the cylinder which is being emptied and connecting to the compressor to draw out the vapors, then reconnecting to the first cylinder. After all the liquid has been transferred the compressor can be used to draw the remaining vapors from it.

If there should be a large amount of this work, it could be expedited by making up a transfer manifold with a three-way valve in it. It would then be necessary to connect and disconnect only once to make the complete transfer. Care should be used in selecting the valve so flow can be in any of three ways: (1) directly from one cylinder to the second; (2) from the cylinder being filled to the compressor, and (3) from the cylinder being emptied to the compressor.—Ed.

Nebraska

We are very much in need of a chart which would cover 500- and 1000-gal. tanks, especially. If available, we could use a chart covering 460-gal. tanks, also.

Our reason for needing charts like these is that we sell propane on a temperature correction basis which, of course, involves much multiplication and chance for error by our drivers.

If such a chart or charts are available we would appreciate information in obtaining such.

R.H.

We do not have any charts like you desire and do not know of anyone who does have them. They are special and one would be needed for each size and type of tank which is served.

It will be necessary for you to make them or have them made, using the correction factors shown in Table 1, page 51 of the "Handbook Butane-Propane Gases."—Ed.

South Dakota

For a long time we have tried to figure out the proper orifice drill size. We have at hand three different charts all marked for propane. Take, for instance, a 50 drill. One lists the Btu as being 35,480 per hour; another says the 50 drill reads 48,380, and on the last is 33,966.

Now what we would like to know is which one is right. Maybe they figure different on input and output. But we would like to have the input chart. Could you give us that?

G.J.W.

We have had inquiries regarding orifice charts before and have investigated a number of them to study the variations in rated flow.

We have listed below the calculated flow through a No. 55 drill size and a No. 45 drill size orifice, as given on five different charts. We have averaged the four which show the closest agreement, and have calculated the variation from the average for each of the four.

We have listed Anderson and Forrester's flow rates for the same size of orifices in the column below the figures for the average rate. They disagree entirely with the other four and we don't know why.

You will note that the variation from the average of the No. 55 drill size flow is from a -4.0% to a -2.7%, and for the No. 45 drill size it is from a -1.8% to a -2.3%. These variations are relatively small and are within allowable tolerances.

We would suggest that if you are using Anderson & Forrester's orifices, you use their table; otherwise, any of the other four listed above should prove satisfactory.

The flow of gas through an orifice is determined by a mathematical formula made up of the following five items: quantity, area of the orifice, gas pressure, specific gravity of the gas, and a factor called the coefficient of discharge. When any four of these are known, the fifth can be determined.

The factor called the coefficient of discharge is the one item which has to be found experimentally, and it is affected by the size of the orifice, the angle of approach to the orifice, and many other factors. Since this factor varies from .64 to as high as .97, it is easy to see that a difference of one or two hundredths in the calculation of this factor would affect the

calculated flow accordingly. Generally, the coefficient of discharge is .80 to .85 for most orifices used in burners.

If you are drilling your own orifices in the field, we would like to refer you to page 120 of the Bottled Gas Manual, to the paragraph headed, "The Difference Between Factory and Field Drilled Orifices." Field drilling usually produces an oversized orifice, and this should be taken into account when determining the size of the orifice.—Ed.

Pennsylvania

Will you please tell us the flash point of propane gas?

W.F.C.

The flash point of propane is -156° (calculated), the boiling point is -43.8° Fahrenheit (calculated), the boiling point and the approximate ignition +950° Fahrenheit.—Ed.

Washington

We are turning to you for some information on gas safety controls.

The insurance people for one of our large resorts believe that there should be 100% shutoff valves on all top burners on ranges and two plate burners. We want to know if there is such a device or some information on how to make them up. Also, if there are insurance companies who have passed on installations without requiring any changes in a CP range. Has this come up before in resort or motel installations?

C.W.K.

There must be very few insurance companies which call for safety shutoff valves on the top burners of ranges and hot plates as we have not heard of such a request before. AGA approved ranges are not equipped with safety shutoff on the top burners, nor does the National Fire Protection Association Pamphlet No. 58 require such device.

It is possible that one of the following companies may have a device which is applicable: Johnson Gas Appliance Co., Cedar Rapids, Iowa; Milwaukee Gas Specialty Co., 722 N. Jackson St., Milwaukee, Wis.; Robertshaw-Fulton Controls Co., Youngwood, Pa.—Ed.

Authority	No. 55 Drill Orifice			No. 45 Drill Orifice		
	Btu/hr. Propane	Variation from Aver. Btu	%	Btu/hr. Propane	Variation from Aver. Btu	%
Anco Gram	19,280	-342	-1.8	48,000	-117	-0.2
Rego	18,172	-766	-4.0	47,532	-351	-0.7
AGA Gaseous Fuels	19,450	-512	-2.7	49,600	-1117	-2.3
Handbook	BP Gases 18,850	-88	-0.5	47,000	-883	-1.8
Average	18,938			47,883		
Anderson & Forrester	23,300			70,480		



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SURE!

SURE!

SURE!

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GAS

... Yes — when you specify "Stanolind" you can be SURE of dependable "on spec." products from conveniently located, modern plants, and trained technical personnel to assist with YOUR problems. Why not write, wire or call.

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NOVEMBER



Editorial Comment

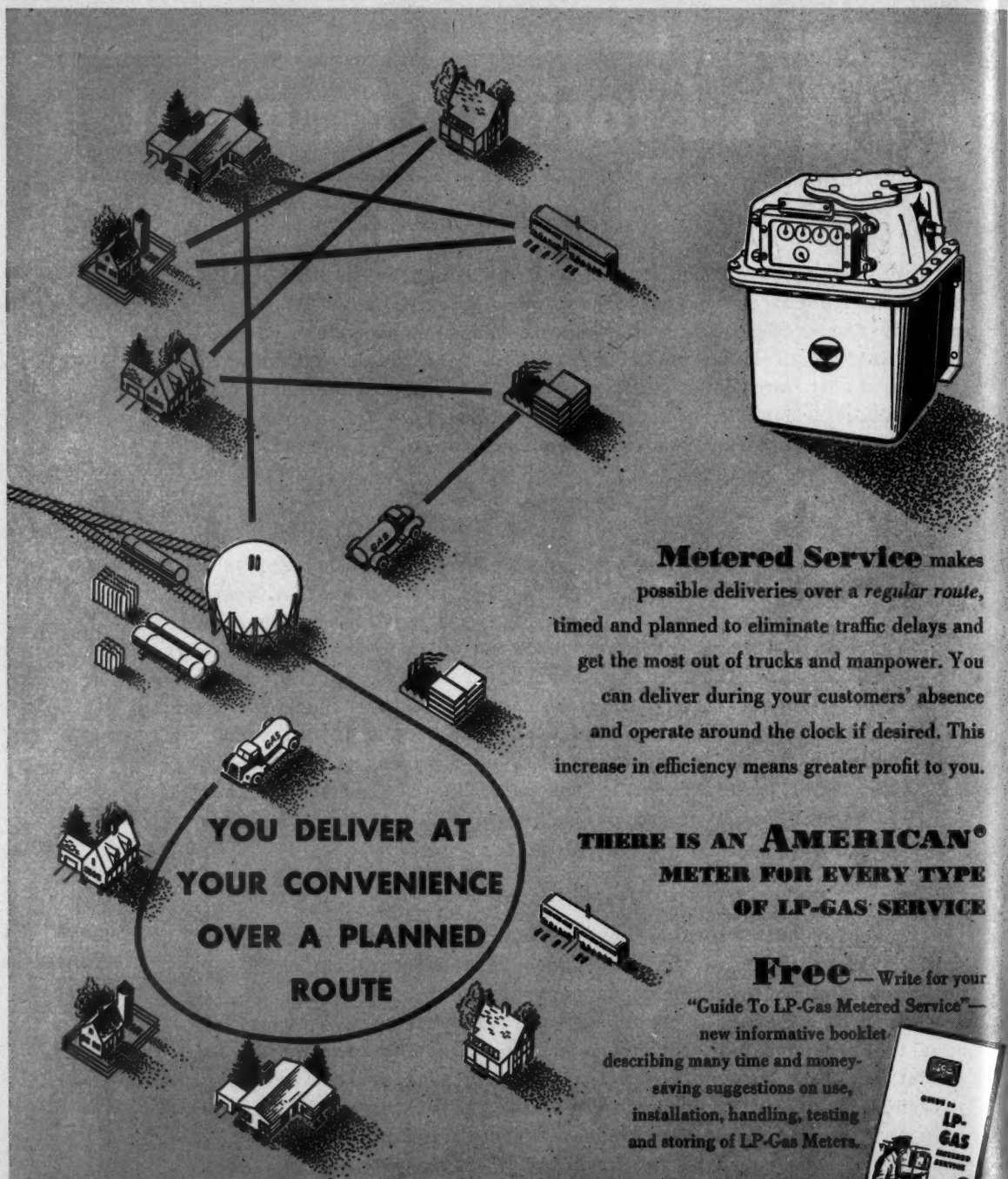
WE ARE PROUD of the big figures which appear in some of the government reports flowing across the editorial desk. Others provide food for thought, and in some cases deep concern. The President's Conference on Occupational Safety brings out some of the worst. It reminds us that some 15,000 occupational deaths and 2,000,000 disabling injuries occur annually. These are estimated to cost business and personnel four and one half billion dollars annually.

One of the objectives of the President's Conference is to aid smaller businesses, where a high incidence of injuries occurs, in reducing their number. In a parallel release from the Bureau of Labor Statistics, we find evidence of the effectiveness of organized safety programs. Public utilities, which have long stressed safety training for all employees, are far down in the tabulation, with only one percent of the injuries and two percent of the deaths chargeable against all occupations, including agriculture. If the public utilities can do it, the L. P. gas industry can do it. Is your plant safety program "in gear"?

REPORTS COMING in from several of the leading tractor manufacturers indicate that L. P. gas is being "priced clear out of the market" in the north central states. If we can believe what we hear, a number of gas distributors are imposing penalty prices on farm consumers who buy fuel for tractor operation. This does not seem logical in a region where summer gallonage is urgently needed to balance the winter peak. We have seen this condition arise in other areas in the past, and it has always been cured by the fine old American process of free competition.

Ed.

METERS STOP COSTLY CROSS-HAULING AND SPECIAL "OUT-OF-GAS" DELIVERIES




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YOUR CONVENIENCE
OVER A PLANNED
ROUTE**

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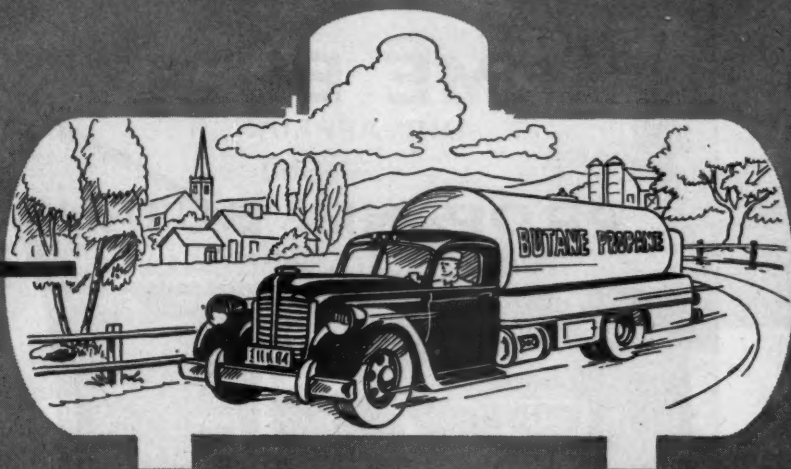


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BEYOND THE MAINS



On the morning of September 18 the people of Los Angeles were shocked by newspaper reports of an explosion and fire that had been touched off as the result of "butane" gas escaping from the operating tank of an L. P. gas powered truck. The driver had brushed his right fuel tank against the corner of a building while backing the loaded truck into a narrow alley. After bending the steel guard, the impact had knocked off the fuel outlet valve, and the entire contents of the full tank had escaped. Seven persons were injured, and two neighboring buildings burned with an estimated loss of \$200,000.

Shocking as this news was, there was an even worse shock coming for the L. P. gas industry, and for those in charge of enforcement of the local and state L. P. gas codes. The fuel tank, which was legal in 1944, had been outlawed for reasons of safety since Jan. 1, 1946. Among other deficiencies, there were no excess flow check valves under the service valves. Had this tank been replaced with one complying with the present code, or had it been equipped with the protective valves as now required, it is extremely doubtful that this accident could have happened.

The owner of the truck had been operating on "butane" since before 1940. He claimed, with apparent sincerity, that he had never known that the tank did not comply with the code, and that he would have been glad to make the necessary changes had it been brought to his attention. Following the accident, he did take immediate steps to correct all tanks in his fleet.

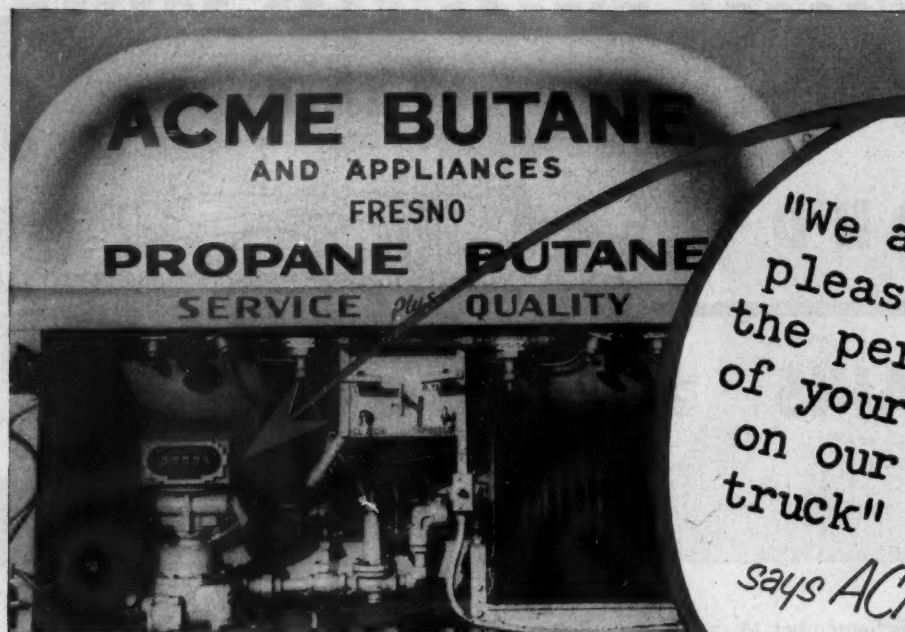
As happens in all such cases falling within its jurisdiction, the Los Angeles Fire Depart-

ment made a thorough investigation, and filed a detailed report, with recommendations for preventing similar accidents in the future. The Department is unusually well informed on the proper and improper methods of handling L. P. gas. They have no prejudice or hysteria in the matter—to them it is just another commodity that can burn or explode when mixed with air and exposed to ignition, just like gasoline or any other volatile flammable liquid. The proper use or transportation of butane and propane on the public thoroughfares does not bother them at all, but they are greatly concerned that there may be more of these uncorrected pre-1946 tanks in service.

From what we have seen in our visits around the country, we believe that this problem is not confined to Los Angeles, or even to California. We think it may exist in almost any locality in which L. P. gas was burned as motor fuel prior to the general adoption of the code provisions requiring the use of excess flow check valves back of the tank outlets.

No public inspection or enforcement agency can ever catch all of these violations of public safety, because it is not possible for them to see all installations. The men who dispense the gas are the only persons who are able to determine the safety equipment status of every tank in service. They could, if required, have this information compiled within thirty days, and then—let's hope that the boss has enough guts to refuse service to sub-standard tanks.

Karl Abell



When Acme Butane and Appliances set out to have a delivery truck custom assembled for them, they wisely selected a custom-made meter installation—the new Rockwell "760" with the patented Parkhill-Wade dispensing system. Now, months later, in reply to our query about performance, they say, "The meter, when tested and sealed by the Fresno County Sealer of Weights and Measures, checked out perfectly." You, too, can get this same reliable Rockwell meter performance for your trucks. You will save on delivery time, stop product losses and can use meter records for cost control and to improve your accounting practices.



Check the advantages of the *NEW* ROCKWELL "760" LPG (Liquid) Dispensing Unit

- All commercial butane and propane mixtures can be rapidly delivered during all seasons of the year. No winter-summer adjustments are required.
- The patented Parkhill-Wade system used assures accurate metered deliveries by preventing vaporization of LPG with the minimum amount of pressure being supplied by the pump.
- Micro Adjustment provides easy, accurate and positive calibration even while the meter is in operation.
- The extreme durability of meter and accessories assures maximum on-the-job time. The metering principle has been proven in hundreds of thousands of gasoline dispensing pumps. This meter has the high degree of accuracy required by Sealers of Weights and Measures.



This meter with its sturdy outer housing of alloy ductile iron satisfies the safety requirements of all states having specific standards and has been listed by Underwriters' Laboratories.

Write For Catalog OG-250



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PRIVATE WAY

The HIGH ROAD to PROFITS

By Gene Creighton

Faylane Road—
private street on
which Mr. Fay
built five model
homes.

**Enterprising dealer
builds five model
homes and uses
them for selling
LPG installations
and appliances.**



The home of John Fay, Sr., near company office is used for showing prospects actual installations and various uses for LPG.

A LIQUEFIED petroleum gas dealer with a lot of unusual ideas and selling assets, is John J. Fay, Sr., owner of Fay's Falmouth Gas Co. in Falmouth, Mass.

Located on historic Cape Cod, the target of thousands of summer vacationists each year and swiftly growing as a year-round "commuters colony," Mr. Fay has been a Pyrofax dealer since early 1946. Prior to that,

he had long experience in heating installation, air conditioning, appliance retailing, etc., in his native city of Medford, in mid-state Massachusetts. Moving into Falmouth, however, a gay community of bright sand beaches looking out on Nantucket Sound in 1946, Mr. Fay found liquefied petroleum gas, a "bright new field" for exploitation.

At that time, most of the summer



Prospective user of LPG is greeted at door by Gilbert Noonan, sales manager of Fay's.

tourists and the summer Cape Codders, who own cabins and homes which are closed up during the winter months, were forced to rely on supply sources long distances away for butane and propane gas. Many homes were altogether unheated, and those which had automatic heat of any sort, were dependent upon expensive oil.

Enterprising from any standpoint, Mr. Fay set out to capture the Cape Cod LPG market. His first step was to construct the beautiful showroom shown herewith, a \$35,000 structure which tells the passerby at a glance, that Fay's is set up to sell anything from a butane-fired floor furnace through complete automatic laundries, modern work-saving kitchens, right down to the simplest plumbing repairs, all under one roof. Along with a 9-truck delivery and service setup, Fay's Falmouth Gas Co. offers the widest choice of liquefied petroleum gas appliances available anywhere in the resort section of New England, and, because he maintains a comprehensive basement trade-in department, he has often managed to sell as many as 3 major appliances per customer.

As pictured, the striking showroom, with its all-glass front, model kitchens, model bathrooms, etc., is a No. 1 asset with the Fay company. The showroom, however, is only a small part of the story. For, as Mr. Fay points out "There are 5 more showrooms in the rear" which go

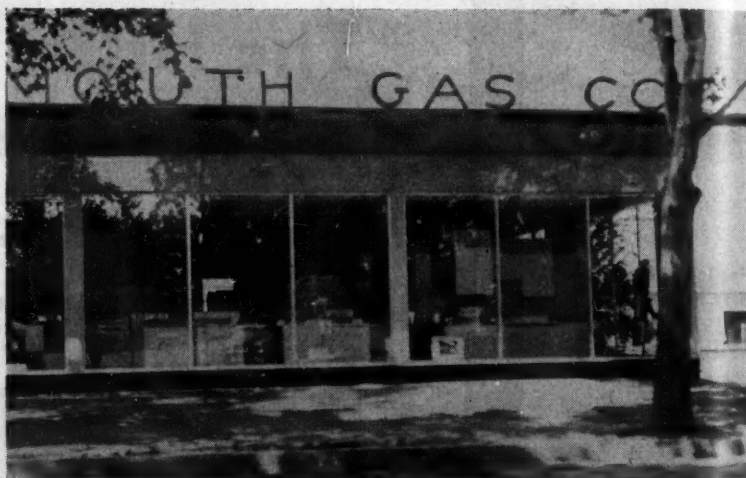
much further toward clinching sales.

When Mr. Fay selected the site for his showroom, he found that surrounding property, including a large placid pond, was unimproved and for sale. As a result, the Cape Cod L. P. gas dealer purchased no less than 20 acres, and in the process developed a "little empire of his own" which is of constant value in sales-building.

In addition to white stucco-covered garage, storage buildings, warehouse, etc., Mr. Fay built a 2-block-long, hard-surfaced road which he entitled simply "Fay Lane." On one side of

lation to maintain an LPG refrigerator, range and water heater, at low expense, my own home, or that of my son, can provide the answer. In any case, each of the houses is a practical, operating example of what we have to offer the community."

Fay Lane, as the Massachusetts gas appliance dealer's development is called, is a strikingly beautiful site. Mr. Fay not only terraced the land on the south edge of the pond between the showroom and the water, but installed a 3-hp. pumphouse, which provides an ample supply of



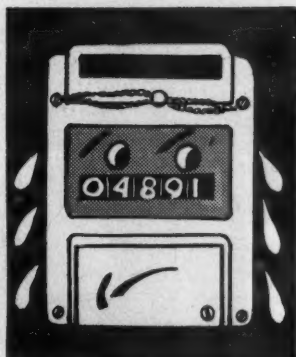
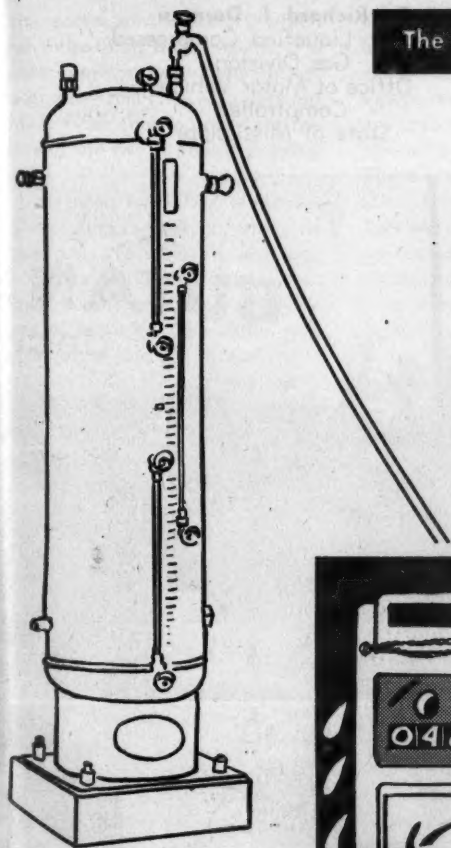
Attractive display of appliances and model kitchen is located in west wing of the office building.

this are three large Cape Cod-style homes, and on the other side two smaller dwellings. All were contracted for by Mr. Fay who designed each one and supervised every step of construction, to duplicate almost any living situation which Cape Cod residents may encounter.

"It's an empire all right," Mr. Fay smiled. "I live in one house, my son, John J. Jr., lives in another, and our sales manager, Gilbert Noonan, in the next. Any of the kitchens, the heating plants, the plumbing systems, bathrooms, etc., are always ready for display to doubtful customers. If a woman, for example, feels that she cannot heat a 5-room house, with a single L. P. gas-fired floor furnace, we can quickly prove the point by dropping into Mr. Noonan's home. If another customer is dubious over the ability of a 2-bottle gas-service instal-

fresh water for lawns, flower gardens, and arboretum, etc., along the way. The rustic fences which surround each of the five homes, are bright with roses, both red and yellow varieties, which are studiously propagated by Mrs. Fay. As a result, the scent of roses and brilliant colors lend an unusual framework to LPG appliance merchandising on the part of this enterprising dealer.

With such assets as the showroom building, the five "dwelling showrooms," a heavy advertising program, and exceptional community goodwill, it is not surprising that John J. Fay sells one of his state's top LPG appliance volumes. Since 1946, volume has grown steadily with the distribution showing ranges as the top item, water heaters No. 2, refrigeration, 3rd, and automatic LPG heat, primarily floor furnaces, ranking 4th.



Inaccurate Meters

uncovered and corrected by the
Mississippi Meter Proving System

Accurate metering of L. P. gas into the customer's bulk storage tank is necessary, to protect the customer against being charged for more than he receives, and to protect the distributor against delivering more than he gets paid for. (The latter is the more frequent occurrence.) In order to protect the public interest, several states now render meter inspection service through their departments of weights and measures, or through other enforcement agencies.

As ordinarily carried out, this inspection service may work a hardship on the distributors. An inaccurate meter gets a red tag, which forbids its further use until it is reconditioned and approved, or replaced with a new meter which can pass inspection. This is a time-consuming process, and may result in keeping a delivery truck out of service for days or even weeks.

The distributors and dealers of Mississippi, knowing that some form of meter inspection was inevitable, have developed their own system of testing and certification, which eliminates the objections to the customary procedure. The method was worked out through co-operation between the Mississippi Butane Gas Dealers Association, the Motor Vehicle Comptroller's Office, and the Moulden Supply Co.

As finally developed and approved, the service is operated by the Moulden Supply Co., pioneer distributors of L. P. gas equipment. Using state-approved testing equipment developed in the Moulden shop, the distributors' meters are tested, repaired if necessary, proved for final accuracy and certified by bonded employees who have been specially trained for this work.

This is a "one-stop service," and the only time lost by the delivery truck is that required to do the necessary repairs and run the final test for accuracy. All necessary tools and repair parts are available at the time of the test. It is a straight commercial service, operated on a self-sustaining basis.

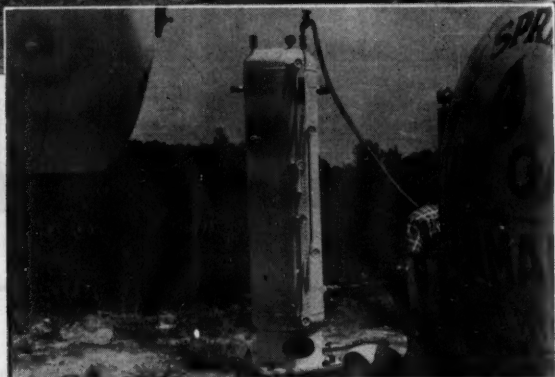
The Mississippi experiment is an outstanding example of self-policing by an industry, to make public policing unnecessary. We knew from reports reaching us from various distributors that the service was highly valued by them. We wanted the viewpoint of the state officials, so we requested a report from Mr. Richard J. Dorman, who is in charge of enforcement of L. P. gas regulations for the state. We are pleased to present his statement in the article which begins on the following page.—Ed.

The Case of the Missing Profits

By Richard J. Dorman
Director, Liquefied Compressed
Gas Division
Office of Motor Vehicle
Comptroller
State of Mississippi



Above: The portable meter prover is quickly unloaded, leveled, and connected to the delivery truck for the meter test. **Right:** The permanently mounted prover is installed on a concrete foundation at the headquarters of the Moulden Supply Co. in Jackson.



THE liquefied petroleum gas distributors and the interested state officials have come up with a new answer to the old problem of what to do about metering equipment used in the sale of LPG to the public. The answer is unique in one respect—the distributors did not wait for inspection by a state authority to be thrust upon them. Through a committee of their state association, working cooperatively with the state authorities and a public spirited distributor of L. P. gas equipment, they devised their own answer to the problem—a bonded meter checking business operated on a commercial basis. During the first season of its operation, this industry-devised system has operated to the satisfaction of everyone concerned, and without some of the

handicaps inherent in a state operated service.

We all know that a liquid meter is a unit that cannot maintain its accuracy unless periodic attention is given to its measuring mechanism. Its accuracy is reduced from the wear imposed by constant use. The physical properties of L. P. gas are also such that they impair the accuracy of the meter unless provisions are made to counteract the results of these properties. In order to protect the public against short measure due to inaccurate L. P. gas meters, different forms of proving units are being placed in service in several states.

These proving units are generally operated by some state or municipal agency. These public agencies are not in the meter servicing business. They

check only the accuracy of the meter. If the reading exceeds the permissible tolerance from absolute accuracy, it is condemned, and its continuance in service is forbidden. The vehicle on which the condemned meter is mounted is out of service until it is equipped with a meter that passes inspection.

The system now in use in Mississippi eliminates the delays inherent in having the testing done by one organization, and the servicing done by another. The bonded operator tests the meter, makes whatever adjustments or repairs may be necessary, if any, and when he is finished, the meter is proved and certified. The truck is ready to go back into service without any more lost time. The savings due to the elimination of delays,

and the correction of meters which deliver more than they register — a far more common fault than the opposite error — has created a demand for this service that is crowding the capacity of the two available proving units.

One of these two units is permanently mounted in Jackson, where its services are available to test and prove the meters on equipment that is brought in from various parts of Central Mississippi. The other is a portable unit, and is carried in a special panel truck equipped as a portable meter repair shop, which is available to serve delivery trucks that cannot be brought to Jackson. The two proving units are identical, except that the portable outfit is equipped with skids which permit it to be moved easily in or out of the back of the panel truck.

The proving units are basically LPG tanks, mounted vertically, six feet tall and 18 inches in diameter. Extending down from the proving tank's top head for a distance of 20 inches is a sealed 10-inch pipe, which makes it possible to use a scale in the upper area with longer intervals between the gallon calibrations. The entire construction of the container conforms with paragraph U-69 of the ASME code for unfired pressure vessels with 200 psi working pressure. All valves and fittings on the containers are approved by the Underwriters Laboratory, and are used as required by NFPA pamphlet 58, as well as the requirements of the Rules and Regulations of the Liquefied Compressed Gas Division of the State of Mississippi. These valves and fittings in-

clude pressure indicating gauges, filler valves, vapor return valves, safety relief valves, liquid withdrawal valves, and thermometers. Readings are obtained from a sight gauge unit specially designed for the provers. These are marked with gallon graduations from 7 to 59 gallons. The markings between 56 and 59 gallons are scribed in tenths of gallons to aid in obtaining more accurate readings.

In checking a meter with this prover, the operator follows these steps:

1—Assures himself that the truck under test has its wheels securely chocked against rolling; sees that all fires in the area are extinguished; that all cigarettes are out; that "no smoking" signs are visible from every approach, and that only authorized personnel are present.

2—He connects the delivery truck's liquid filler hose to the filler valve of the prover; connects the vapor return hose to the vapor valves of the truck and the prover; makes up a hose connection from the liquid withdrawal valve at the bottom of the prover to a small electrically operated pump, and another from the pump to the filler valve of the delivery truck. This last series of hose connections enables him to completely evacuate the liquid from the prover back to the delivery truck.

3—The truck driver then engages his pumps and fills the prover tank. This filling creates within the prover tank the same conditions that exist in the tank of the delivery truck. The vapor valves remain open and connected throughout the entire meter check, allowing the equalization of

pressures between the two tanks at all times. The prover is evacuated, and the first meter test is ready to start.

4—The prover tank is refilled, but this time the driver is instructed to fill it at his normal speed of delivery. This is generally between 17 and 20 gallons per minute. When the meter reads 56 or 57 gallons, delivery is stopped, and the meter reading is compared with the prover reading. If the two readings differ more than the allowable tolerance of 2%, the meter is adjusted or reconditioned to try to bring it into acceptable tolerance.

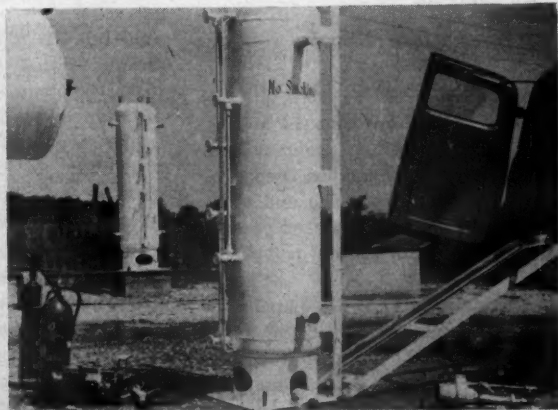
5—The prover tank is evacuated, and other tests are run at varying speeds of delivery. Any needed adjustments or repairs are made to make the meter read correctly at these speeds before the operator closes the meter and applies a special seal that is dated and initialed. A copy of the readings from the test runs is incorporated as part of the bill for testing and repair, and is given to the dealer. A second copy is sent to the meter manufacturer to keep him informed as to how his meter is functioning in the field; a third copy goes into the files of the meter proving company as a permanent record.

Of all the meters that have been checked since the proving service was inaugurated, the majority have shown that they were delivering more gas than the meter registered. One of the first meters checked was passing 114 gallons for every 100 registered. This case has been repeated time and time again, but generally on

(Continued on page 142)



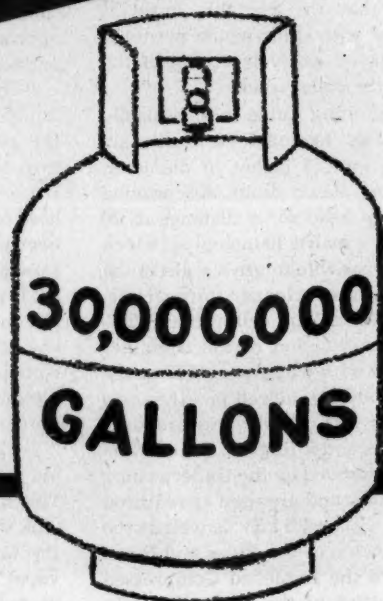
Panel delivery truck carries the prover throughout the state. Bins to carry a complete stock of repair parts for meters occupy one side of the body.



Portable and permanently installed proving units are identical except for the additional members to skid the portable unit in and out, and to level it after unloading.



The Trailer Market is . . .



But Electricity and Natural Gas are Cutting In

By Jack Kneass
Editor
"Trail-R-News" Magazine

UP to the present time the Mobile Home owner, or proud possessor of a travel trailer, has used propane, and that's been the end of it. If he had to drive fifteen or twenty miles for his propane he drove and tried to like it.

Very often the L. P. gas distributor has been contemptuous of this business. After all, the trailerist buys one or two 20-pound tanks at a time, and that doesn't amount to very much.

However, when you multiply that 20 pounds by 750,000, the approxi-

mate number of mobile homes in the United States, you get a total of 15,000,000 pounds. This is the quantity of butane-propane used by American trailerists every five weeks. In a year, it amounts to more than 30,000,000 gallons, and a high percentage of it is "cash and carry."

People with large families, or those who do a fair amount of baking, use more than one tank in five weeks, but this amount gives a very fair average, as about eight percent of present day mobile home owners are in the ranks of the retired and do not bake to the same extent as women with families.

This propane market is increasing

at a rapid rate—yet it may be lost, or seriously reduced, in the very near future. The best that can be said about it is that if present tendencies continue the same amount of propane, or a little more, may be used for many years to come.

Yet a first glance at this market gives a very different impression. Travel trailers in the 14 to 25 foot class are more and more coming to have panel ray heat and gas lights.

A large Pacific Coast producer, "Fleetwood," has recently made propane hot water heaters standard equipment on all trailers.

LPG hot water heaters are offered

as optional equipment by such eastern producers as "Rollohome."

Servel refrigerators are being provided by many trailer manufacturers as optional equipment.

To understand what may happen to this market we must take a look at the type of people living in trailers or mobile homes. Contrary to general thought they are not a submerged portion of the population but quite the contrary. The average trailerist's income is \$2,000 over the national average.

The trailerist is not, as a rule, old

before. Two out of ten have owned at least two other coaches. They live in mobile homes because they like them, or like the life.

A recent trade survey showed that out of every twenty trailerists questioned three expected to live in trailers less than five years, or no longer than necessary. Three estimated they would be in mobile homes for over five years. Fourteen said they would live in mobile homes always, or indefinitely.

Industry figures show the permanence of the business. Last year over

\$323,000,000 worth of trailer coaches were sold, most in the 30 to 45 foot group ranging in price from \$4,000 to \$6,000. These are intended as permanent homes and, indeed, the average trailerist's stay at one place is in excess of 18 months.

Mobile Homes Luxurious

The present day mobile home has indirect lighting, a large refrigerator, 12-gal. hot water tank, deluxe stove, bath tub, dinette, and many other luxuries. This is true of the cheapest models in the 25-ft.-and-up class.

Indicative of the future is the complete re-designing of the "Spartan" trailer interior. This company, possessor of the largest single plant in the industry with sales last year in excess of \$17,000,000, is introducing refinements in their \$5200 and up to \$6000 palaces on wheels and will include such things as pull down lamps in dining room and living room, and other features found only in the \$50,000 stationary home.

Big money is coming into the trailer park industry, and it is possible in the near future that the eleven hundred space park in Florida will not be the largest in the world. And when Frank Lloyd Wright gets through with the \$1,250,000 park he designed and is building in Arizona, the park industry will have another mark to shoot at. Mere private swimming pools will not be enough.

The management of several trailer parks in the Portland, Ore., area refill customers' cylinders from 500 gal. storage tanks installed by Gas-Heat, Inc.



Cylinder exchange cabinet provides quick and convenient service for trailerites and small domestic consumers. Consumers Gas Co., Moorehead, Minn.

or retired, or a traveling bum. The odds are three to two that he is less than forty years old, and one out of four trailerists are under thirty. Only one in eight is over sixty.

The trailerist's average income is almost \$5,000, and there is nine-tenths of a child in the average family. Both husband and wife graduated from grade school and at least one of them is a high school graduate. One out of seven has a college diploma.

Most of these people have made mobile living a permanent way of life. More than half of the new buyers of mobile homes have owned one



The Trailer Market is 30,000,000 Gallons

It is in the new parks, which are rapidly making the older ones obsolete, where the potential decrease of propane is not only possible but probable. Older parks are being slowly but surely outmoded because many of them cannot take forty and forty-five foot trailers. Some have inadequate electric lines and can not handle the twenty-five to thirty amps the present mobile home draws.

The new parks are, in many instances, piping city gas to every lot. Inasmuch as most trailerists are more or less permanent many do not hesitate to change over to natural gas.

At first glance gas is not as cheap as propane in many localities, and this is a point which can be, and is, argued by the trailerist. Such parks as the new Manor Trailer Park in San Bernardino with forty-two de luxe spaces, offer city gas at a flat two dollar per month. By utilizing gas for some heating this makes the trailerists' cost less than for propane.

The Ideal Arrangement

Some of the better parks in the east are offering city gas on a meter basis, and pipe lines to every trailer space are included in about half of the new park plans.

It is not price alone that induces the trailerist to discontinue the use of L. P. gas. Trailerists, despite appearances, are a luxury loving class, and many parks do not have the benefit of L. P. gas service on the lot. This means that on his day off the trailerist must take time to drive to and from the nearest LPG plant. If he should be forgetful he may find himself without fuel over the week end, for it is as easy to let two tanks run out as one.

Even if there is service to the trailer it is not always satisfactory. Mrs. Housewife may be out on the day the delivery truck calls, or she may be baking. Furthermore, most experienced trailerists have learned that the delivery man, who heaves cylinders up and down with gusto, is apt to strip a few threads, or take hunks of aluminum or paint off the front of the trailer or the gas containers. If the trailerist has \$6,000 invested in his rig this does not make

him happy, and it does make him determined to put his own tanks on his own mobile home.

In addition to natural gas, propane has electricity for a competitor. Some eastern trailers are coming out equipped for 220 volt lines, with third wire grounds. At present few parks can handle this system, and electric stoves are not likely to become popular in the near future, but with the passage of time, and the introduction of washing machines and dryers to trailers, it is probable that high class parks will be built equal to the equipment. A few such have already been erected.

What is the exception now could become the rule in ten years, as the trailer industry itself proves. What was a box on wheels has evolved, in a few short years, to a movable palace. Parks are in existence equal to any private estate. Some, like Treasure Island at Laguna Beach, Calif., charge \$150 a month during the season and throw in a country club membership. Hollywood Park, in Florida, is content with \$110 during its peak period. But yet others, like the little Manor Park we referred to before, give an extra private bath and hold rates down to a bare \$30.00 a month.

Few trailerists will buy large pro-

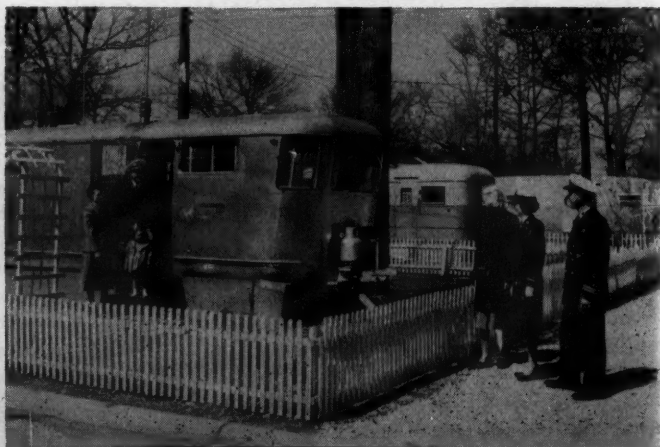
pane containers. They want to feel mobile, even if they don't intend to move in the near future, and they see no reason why they should buy large containers. Many of the larger park operators would be glad to handle propane if it were not necessary for them to install an expensive storage tank.

In the May, 1953, issue of *Butane-Propane News*, starting on page 67, is an article on the semi-automatic system of cylinder filling by the Richmond Refinery of Standard Oil Company of California. It would seem that the savings made by such a system would allow the delivering of filled containers to a park operator, thereby allowing a trailerist to pick up a container and deposit his old one whenever he needed gas, providing, of course, that local and state laws did not interfere.

Piped Gas For Parks

From the standpoint of the trailer park resident, the ideal arrangement for LPG supply would be to have exchange cylinders available at the office of the park. This should not be difficult to arrange. A locked steel cabinet, or a small fireproof building constructed acceptably to the local fire authorities, could serve as the exchange base, and the trailer park operator could be the dealer for the local L. P. gas distributor.

Loads of filled cylinders could be



Trailer parks like this one at Great Lakes Naval Training Station provide living quarters for thousands of families in various government services.

delivered, and exchanged empties picked up by the L. P. gas operator at appropriate intervals. This would relieve his organization of the necessity of stopping other work to fill transient cylinders, and would provide a small extra revenue for the park operator. The filling of the exchanged cylinders could be fitted conveniently into the work routine of the gas distributor, and everybody would benefit.

Exchange System Safer

This would not be out of line with the present activities of the trailer park operators who now supply other essential services for their customers, including water, electricity, sanitary facilities, and in many cases sports facilities. It would get rid of the nuisance and hazard of having service and delivery trucks from the L. P. gas bulk plant operating in and out of the park, and would end the violations of safety regulations which are going on almost everywhere in filling trailer cylinders "on the hitch."

In districts where there are no near-by propane plants such a system would enable a trailer park or a service station to be a gas center. Travelers through the south, in particular, often have difficulty locating a source of fuel.

Ease in obtaining LPG would undoubtedly contribute to the use of additional propane equipment. We

refer especially to L. P. gas hot water heaters and gas clothes dryers. And if, day of days, a practical, moderate priced propane refrigerated air conditioner comes on the market it is easy to see propane selling more rapidly in summer than in winter, at least to trailerists. Many parks are not wired so that a half, three-quarter or one horse electrical unit can be used, and even the most permanent of mobile home dwellers hesitates to buy something which he may not be able, at a later date, to utilize. This explains the prevalence of the evaporative type cooler in trailer parks.

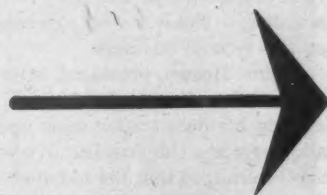
99% Mobile Homes

It is interesting to note that less than 1% of the trailers built in 1952 were of the travel type. 99% were mobile homes. In recognition of this fact a dozen state associations have incorporated the name "mobile home," in their title, and the national organization, the Trailer-coach Manufacturers Association, will be the Mobile Home Manufacturers Association after November, 1953.

Over 80,000 mobile homes were built in 1952, and estimates of 1953's production range from 83,000 upwards. All of these are equipped with propane tanks, which augurs well for the future sale of LPG. With a little more convenience in the refill department, this business can become very attractive.



Read How a New Jersey Dealer Cashed in on the Trailer Market



Birmingham Village Trailer Park, near Van Nuys, Calif., is organized for family living, with gas supply "by Elpee." Tags on tanks are safety instructions.

Owning and Operating His Own Trailer Court Showed This LPG Dealer How To Go After More Trailer Business



Vernon Brown removes 20-lb. cylinder from trailer for refilling.

By Albert S. Keshen

A PIONEER in supplying the fast-growing trailer court market with propane gas, Brown's Bottled Gas, Inc., near Lodi, N. J., is intensifying service to this class of customer. The rapid growth of this company is itself indicative of the high returns accruing to dealers who concentrate on this type of business.

Arthur Brown, president, is an experienced trailer dealer himself, operating his own trailer sales agency and court as a sideline. But five years ago he realized that the mobile home industry would have to rely heavily on the use of L. P. gas and that he might as well share in the profits. At that time trailers were using gasoline stoves. Besides being troublesome to handle the fuel, the stoves required much cleaning work.

So, Mr. Brown sold his tenants on the idea of using bottled gas cylinders, and the convenience of this fluid, used largely for cooking and heating, spread not only throughout his own trailer court but neighboring ones, as well. Starting on a small scale, Brown's service expanded so that he is now supplying the fuel to eight trailer courts. His business, however, is not confined to trailers, alone, but includes many residential and commercial installations.

The trailers use 20-lb. cylinders. Since most trailer manufacturers have come to realize the advantages of L. P. gas, practically all new trailers come equipped with two cylinders which, of course, are owned outright by the occupants.

Every day the Brown truck makes

its route of accounts to either refill or check the cylinders. When it winds through the paths of a trailer court, the driver looks for the red tags which are attached to the cylinders outside the coaches and which indicate that attention is needed at that particular spot. This system, of course, saves a lot of time for the occupants, who otherwise would have to take their cylinders to a bulk plant for refilling.

All bottles which need refilling are taken back to the bulk plant in accordance with New Jersey law for cylinders of 100 lbs. or under. The bulk plant has a capacity of 7500 gallons and is filled with propane supplied by the U. S. Natural Gas Co., a New Jersey concern. The plant is conveniently located on Highway 6

across from the office and is thoroughly safeguarded with wire-enclosed fence and other legal requirements.

The empties are placed on either of four Fairbanks scales with the gas pumped in from the adjacent bulk tank.

The rate is \$2.50 for every 20-lb. cylinder, with collections made once a month from the trailer court operator who collects from the individual tenants.

"Our greatest merchandising asset," explains Mr. Brown, "is our daily service calls, which apparently none of our competitors carry out, possibly because they don't do as large a volume with trailers. The trailer occupants know that they can count on us regularly to collect and refill their cylinders without any fuss or worry on their part—and that's what counts in this business. We are also available at any time of the day or night for emergency repair service."

Sideline In Accessories

Through these contacts with about 900 families, Brown's has also been able to build up a side-line in accessories such as fittings, swing-over valves and automatic regulators. This branch of the business, in fact, is growing so rapidly that the company is putting the finishing touches to its \$40,000 showroom back of its trailer displays. There will be displayed the latest lines of heaters and appliances, plumbing supplies and torches, especially geared to trailer use.

Also on the premises is a modernized workshop in charge of a full-time serviceman.

Brown's also fills 100-lb. cylinders for residential and commercial customers. But the firm is convinced that its best opportunities for profits lie in the dynamic trailer field.

Points out Mr. Brown: "There are over two million people living in these mobile homes and the number is increasing at a 200,000-a-year rate. Housing headaches—high rents, high prices and continued shortages—are causing thousands of Americans to move into trailer coaches every day. Practically all of them find it convenient to use L. P. gas and the dealer who is geared to supply their needs will cash in on this lucrative market."

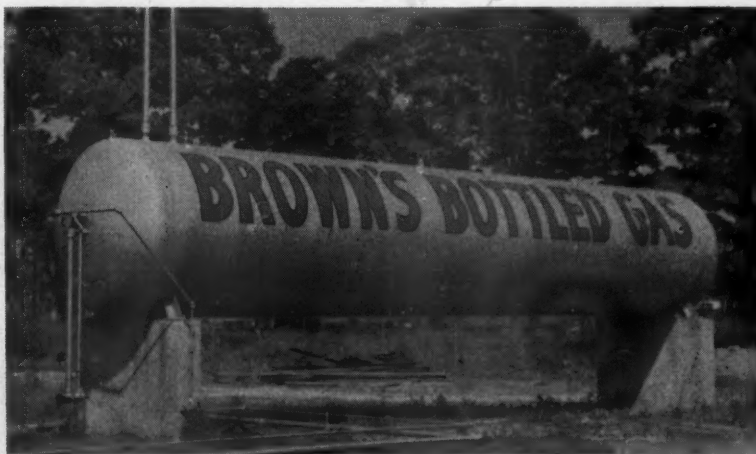
Associated with their father in the business are Vernon Brown, who is manager, and Clifford Brown, vice president.



Last-minute order is given by Arthur Brown, president, as his son, Vernon, starts on a delivery run.



20-lb. cylinders are weighed as they are filled.



Brown's storage tank holds 7500 gal. of LPG.

Missouri Dealer Proves That Variety Is the Spice of Success



Setting up a business with the customers' convenience in mind has proved to be a profitable principle for Missouri couples, Ad and Vi Doane and Al and Jeanne Foster.

By Patrick J. Galvin

AN L. P. gas dealer can do more business with country people if he organizes and sets up with their convenience in mind rather than his own.

That's the basic tenet of Sunnydale Appliance Co. in southern Missouri some 25 miles north of Springfield, a tenet which receives varying amounts of lip service from all but rarely is followed through to the maximum.

Sunnydale looked the principle over, liked it and went whole-hog. Operated jointly by Ad and Vi Doane and Al and Jeanne Foster, the firm is located not in a city—not even in a village—but out in the middle of nowhere at the top of a long hill in the

heart of the southern Missouri farmland region. Nearest town is Buffalo, five miles north. What does this mean to the farmers? "A world of convenience," answers Vi Doane, "not only to the farmer but to his wife. The farmer might get away with going into town in his grimmest field clothes, but his wife can't and won't try it. We give them a place out in the country which for all practical purposes is in the next pasture.

"When the women want a break from their chores, they can come here for it and possibly run into a few of their neighbors. They can shop around all day if they want to, and they're not driven out by that nagging worry that they ought to buy

something. It's much like going over to visit a neighbor. That hominess is hard to capture in a city or a town. So they buy more easily and they buy more, because they get used to the things we carry ahead of time."

Exploiting this to the utmost, Sunnydale didn't stop with its basic commodity, Skelgas. It expanded into a country store with just about everything except groceries. The two couples have appliances in gleaming white, freezers, refrigerators, ranges, mixers, radios and television. They have heaters and stoves of all types. They have a huge floor covering department consisting chiefly of linoleum but including some carpeting and non-ceramic floor tiles. They carry such items as water pumps and pump systems, and all sizes and shapes of farm sinks.

Owners Also Employes

The Doanes and Fosters handle all sales and service by themselves, with the women alternating in keeping the store and the men spending most of their time out on the gas routes, in many cases combining a gas run with the installation of a number of appliances. Foster worked with television for 10 years, so he gets the task of installing and servicing the many sets being sold by Sunnydale. Doane has had some 20 years experience in LPG servicing, and he handles most of that. With their electrical and mechanical experience they had little trouble

learning the workings of other related appliances, so good servicing was no problem.

Sunnydale has one huge display room running across 55 feet of the 75-ft. store. Merchandise in this showroom is selected for looks and brightness, consisting of gleaming ranges, steel kitchen cabinets and bathroom fixtures in white and in modern colors. The room is brightly painted, the floor is covered with linoleum, and 76 small windows let in daylight all the way across. Since the room is only nine feet deep, this is almost as good as an outdoor display.

Behind this front display room is another, some 38 feet square, which includes the floor covering department in one corner, more gas ranges and all types of heaters, and a TV salon. Adjacent to this is another room about 27x20-ft. which contains washers, sinks, freezers and refrigerators.

Coffee Pot's Always Full

Here also is a dinette table with chairs and a coffee pot that's always loaded. Here the farm wives can sit and chat and listen to the radio while talking to the women in the store.

It also is a headquarters in the evening, for Sunnydale, still thinking of the convenience of the particular type of customer, stays open each evening until 8:30. Entire families come in in the evenings to sit around and chat. Always, at some time or other during



Freezers have a practical value on farms. Mrs. Doane shows them to everyone who comes in.

such an evening, they'll get to talking about merchandise and mosey around looking over the stock.

That is merchandising where it pays off, at the point of purchase and with all parties at ease in friendly conversation. But Sunnydale draws a lot of town business, too. The store is advertised on billboards around the area and constantly in the movie houses and in the weekly newspaper of Buffalo. The variety at Sunnydale,



Tanks in the sun proclaim Sunnydale's main business, so the words and signs sell appliances rather than gas.

Variety Is the Spice of Success

mostly for the convenience of country people, proves a big drawing card for townfolk.

"I think the thing that moves best of all the varied things we carry," says Vi, "is bathroom sets. Most of them sell just as we have them set up in the front display room, and I think keeping it bright and clean and neat is a big factor. Farm areas around here generally have been away behind in modernizing bathrooms. Now they're getting around to it and many of them are really going modern by adding extra bathrooms for other parts of their houses. They've always seen these things in city stores, of course, and they see colored bathrooms in all the magazines every day. It seems as though, from the farmers' point of view, it became easier for them to obtain these things when we came out here two years ago. Of course now, if they get the whim, they don't have to wait until Saturday to come and shop. They can stop by on the tractor.

Gas Opens the Door

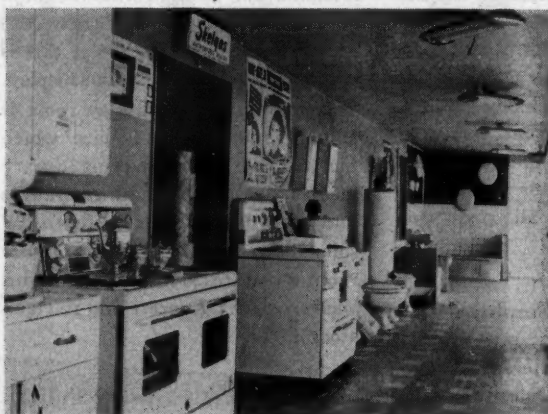
"But the big factor in that is the gas. We have the whole area routed for both bulk and bottled gas delivery, and we keep records of each customer's consumption. We know within a week when a farmer will run out, so we go ahead and make our deliveries without waiting for him to reorder. If they're a little bit interested in a range or heater or anything else, it isn't much trouble to load it up and show it to him at his house. And when we offer to do that, customers don't feel they're imposing on us to ask to see something at the house, even when they're not sure they want to buy. But once we get the appliance in the house the sale is almost made.

"The gas sales make us their friends and give us a share in their problems. Gas also gives us this valuable foot in the door for selling them about anything else they might want or need. They're willing to pay extra for the convenience of dealing with us, and nearly everyone is extra grateful for the opportunity to get so many of their needs at one place where it can all be put on one bill and they don't have the trouble of accounts and bills from a number of

different stores. So we could probably do about as well with little margin in price over the stores in town. But we don't exploit that. We keep our price down so a customer can't tell himself he'd save \$5 by going into

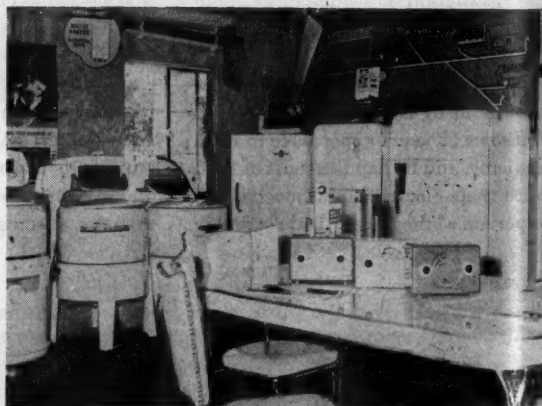
interested in building summer gas business as well as building summer income apart from gas.

And possibly the best measure of their success at blanketing the countryside with gas ranges and heaters



Front display room, 55x9, is lighted by daylight and fluorescence. Premiums visible on range compete with city practices.

Dinette set allows for chatting groups to have coffee at Sunnysdale, and builds friendships.



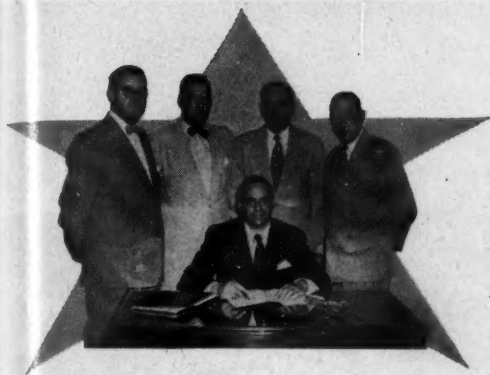
town. We think every sale is important. We don't want to lose even a few that way. When the stores in town go in for premiums, we can do it too, and keep things even."

But the Doanes and Fosters are primarily in the gas business, and while receipts from their other merchandise are more than sufficient to maintain the business they still are

and other appliances is the fact that during April, May and June they sold forty 100-pound tanks per week for cooking purposes despite the fact that most families in the area have 500-gallon tanks.

It's been a drouth area for two years, but real service in the form of varied stock has been pulling them through.

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A New LPG Star Is Born • Part 2

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Sales meetings for training and exchange of ideas are held by Consolidated several times each year. Sales Manager Sidney L. Stapleton (extreme left, second row) meets with division managers, branch managers and salesmen.

A Company Is Known By The Men It Keeps

By Alex W. Bealer, III

Just as a chain is as strong as its weakest link — so is a company as strong as the abilities of its key men.

This is the second in a series of articles dealing with the birth and growth of the Consolidated Gas Co. of Atlanta, Georgia.

A YEAR ago last August, five of the largest L. P. gas dealers in Georgia got together and formed the Consolidated Gas Co. Consolidation brought these five dealers strength, size and five heads to put to each problem instead of one. At the end of a year's operation all five are convinced that they made the proper move. Hermann Paris, president of

Consolidated Gas Co., states firmly that faith was the most important of the ingredients which made consolidation successful for these companies.

Of course, faith is a human attribute; it only happens to people. This makes people awfully important in Consolidated's plans for the future. A look at the organization and management of Consolidated will demonstrate what a large part qualified men play in this company's current opera-

tion and its plans for an ever expanding operation in the future.

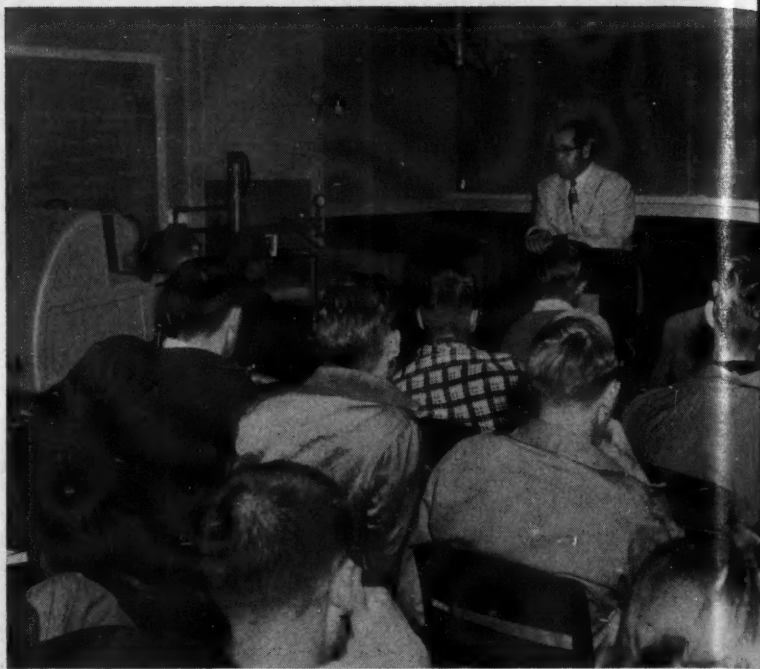
Top echelon of Consolidated Gas Co. is the "Home Office," located in Atlanta, Ga. "Home Office" is concerned solely with management, and it is not so much interested in sales and service as in the results of sales and service and how to make these and other aspects of the business more efficient and profitable. Also, purchasing for the whole company is done here. Top management, however, will be discussed more fully in a later article in this series. For insight into the organization managed by the top executives one must take a look at the division offices and their managers.

Five Division Offices

Consolidated, for purposes of sales, storage, service and easier management, is divided into five division offices. Each of the divisions, in turn, consists of from three to seven branch offices. Division territories exactly match the territories of the former five independent dealers which formed Consolidated. Of course, each division office has a manager who has full responsibility for every phase of activity in his territory.

This is quite a job, and the fact that Consolidated's first year of operation was extraordinarily profitable under the circumstances in a fine commentary on the caliber of division managers. The home office, however, must be given full credit for allowing full rein to the abilities and experience of these five men. Far from being subordinates, they are considered full partners in the management of the company, even though each is responsible only for his territory. A brief look at each of these men quickly shows that their importance is not due to their position, but to the character of the men themselves.

C. A. Perry heads the Atlanta Division, largest in the company from standpoint of sales and population. Mr. Perry has been connected with gas sales and service a long, long time. His experience started in the Atlanta Gas Light Co. several years before the war. After three years naval service he joined the Georgia Automatic Gas Co.; parent company for Consolidated, in Atlanta as manager of service and fuel delivery in the Atlanta branch. Mr. Perry is no



Above: Fred A. Rives, executive vice president of Consolidated, addresses students at Southern Technical Institute. Consolidated men, from president on down, are called upon by division and branch managers to help in company's continuous training program.

Right: Outside assistance is often invited to contribute experience and ideas for training of personnel. Here we see Carl Sorby, vice president of George D. Roper Corp., showing the correct way to make a demonstration before a group in the Atlanta Division office of Consolidated.

man to keep his mouth shut when something needs to be said, and the more he opened his mouth the more respect he gained from Hermann Paris, who was then president of Georgia Automatic. Having asked for it, he got more responsibility as the company grew, and shortly after the consolidation he was named head of the Atlanta Division.

William A. Bryant, who is doing a fine job of developing his Columbus Division, is another good example of what a combination of experience and ability can do to make a company successful. Bill Bryant is probably the youngest of Consolidated's division managers, but he has grown up with the L. P. gas business in Georgia and is an expert in every particular. Having joined the Automatic Gas Co., headed by Fred A. Rives, now executive vice president of Consoli-

dated, back in 1941 as a salesman, Mr. Bryant quickly proved his ability. After the war he returned to the company as manager of the Columbus branch and executive assistant to Mr. Rives. When Automatic Gas became part of Consolidated and Fred Rives moved to Atlanta, Mr. Bryant advanced to head of the whole Columbus operation, which consists of five branches, in rural and urban areas.

Down in Montezuma, in the center of one of the richest farming areas in Georgia, the problem of selling LPG are quite different from those in cities. No man in the business knows these problems better than John T. McKenzie, Montezuma division manager. His first experience with L. P. gas was with the Economy Gas Co., formed by Claude Haugabook, now a Consolidated vice president. Two years ago, Mr. McKenzie bought

stock in the company and began to learn what LPG can do on the farm; he started using L. P. gas as fuel in his own farm tractors. At the time Economy Gas Co. joined the Consolidated Gas Co., Mr. McKenzie dropped other interests to become division manager and a director in the new company. Recognized nationally as an authority on tractor conversion, both installation and sales, Mr. McKenzie recently contributed an article on this important phase of the LPG industry to "Butane-Propane News."

Consolidated's Savannah Division hugs the short Georgia coastline, having probably the largest problems of any of Consolidated's statewide territory. Savannah has no definite market in farm, towns or industry. This presents no special difficulties to Lan-

perience and powers of analysis are often called upon to help solve Consolidated's sales and management problems.

Latest of the division managers to join Consolidated is Roy Mims, who was appointed manager of the fast growing Albany Division last February. Mr. Mims, though new to Consolidated, brought valuable experience with him to the new company. Most of his years of business were with the Standard Oil Co., with which he worked for twenty years before joining Consolidated. The Albany Division, formerly the Consumers Gas Co., operated by W. B. Wight, who is now a vice president of Consolidated, has three branch offices selling to small town, suburban and farm markets. Mr. Mims' oil experience has probably shown great-

sight who is much in demand in the Southeast as a speaker at various business meetings. Mr. Stapleton, together with Hermann Paris, got into the L. P. gas business back in 1939, after having been Principal of the Sandersville, Ga., schools for a number of years. He has done everything there is to do in the business, selling the customer when L. P. gas was virtually unknown in the state, delivering the gas and collecting for it afterwards.

Men With Responsibility

Each of these men has achieved his important position in the company because each has demonstrated that he can shoulder considerable responsibility. This goes far beyond sales. Division offices in Consolidated are, in fact, operated as separate companies working together and division managers are fully responsible for recruiting new men, training them to do the best job possible, and seeing that those who are deserving get ample opportunity for promotion. These same responsibilities are delegated in turn to the twenty-two branch managers, preparing them for bigger positions within the company, and assuring them control on the local level to back up their responsibility.

Of course, division and branch operations are carried out within a framework of policy developed and approved by top management, but this certainly does not hamper initiative in that all management personnel continually contribute experience and judgment toward the formation of policy.

Top management believes that the first step in recruiting personnel for any type job is to make the company as attractive as possible to work for. Accordingly, each branch manager is charged with seeing that the surroundings of his plant are clean and attractive, that tools for the various jobs are available and that those men deserving promotion are promoted when opportunity is presented.

Salesmen, for the most part, are recruited from outside the company. Branch managers try to find local men with some sales experience, but they are fully as concerned with men who show interest in the company and industry and who demonstrate initiative. Consolidated is also anxious to appoint promising service men



der Carn, however, who has made his division one of the most prosperous in Consolidated. For Mr. Carn is a salesman, and if there is no apparent market around, he finds one anyhow. He is no stranger in the gas business, since he worked for years with the city gas company in Savannah, becoming manager before leaving to join the Ideal Gas Co. operated by Mr. B. T. Nightingale. Mr. Carn's ex-

est results in the numbers of new tractor loads acquired around Albany since he became manager.

There is another manager who has not only done much to develop and stabilize Consolidated, but who is recognized as a major contributor to the growth of LPG in Georgia. This is Sidney L. Stapleton, general sales manager and director of Consolidated, a gentleman of spirit and fore-

and other personnel to sales jobs, when interested, to give them as much training as possible for management jobs in the future.

Fuel salesmen are picked not only for their ability to drive and maintain their trucks, but also on a basis of personality, since these men provide the most frequent and important contact of the company with its customers.

Once men have taken jobs with Consolidated they are expected to give their most from the very first day, but old and new employees alike are given as much help as possible through training. Part of the training program is letting employees know what the company is doing, what it is selling at different seasons, what is being advertised, and where ads and news stories about the company can be seen.

Continuous Training Important

There is excellent special training also, for all types of employees and for managers. Every year division and branch managers and top executives attend a five day short course in management at Georgia Tech. This short course is sponsored by the National LP-Gas Association, and is of great benefit in developing branch managers into applicants for larger jobs in the company.

All other training is the responsibility of branch managers, with other managers and executives from the president on down available on call to help where they can. Even since the company was formed, just over a year ago, the training staff at the home office has been increased considerably. Branch managers are taking full advantage of this and outside help to do a remarkable job in training.

Sales training is carried on regularly, handled for the most part on the branch level. Sid Stapleton, the general sales manager, gets around to each of the twenty-two branch offices at least once a month, to outline new policies, products and sales methods. In between his visits all managers use to the fullest the help given by various manufacturers, and often schedule meetings to hear the experts employed by MIX-O-GAS, Servel, Roper and Magic Chef tell of new sales devices and strategies developed for the products sold by Consolidated.

A most interesting aspect of sales training recently instituted by Consolidated was the appointment of Carl Coslick, former branch manager at Macon, Ga., as GLOGAS sales manager for the company. Mr. Coslick was transferred to the main office with his sole duty being to teach fuel delivery men how to be salesmen. This new program will not only increase gas sales, but should also prepare more men for bigger jobs in the future. Safety and customer relations are also included on the fuel delivery sales agenda.

Service personnel, of course, are given continuous training of a more formal nature than either salesmen or fuel delivery men. Every man in the company who is concerned with installation and service of appliances is required to take the four day short course at the Southern Technical Institute, operated by Georgia Tech. In between these short courses service personnel are given frequent talks by qualified men from within the company.

Consolidated's policy on promotions is demonstrated by most of the men in important positions in management today. Nearly all management jobs are held by men who came up through the ranks and demonstrated a desire and ability to take on greater responsibility. This policy

will be continued, and with the excellent training being given to all types of employees, every man in the company has a chance to grow with the business. With such opportunity for all being part and parcel of Consolidated's policy, the salesman, service men and fuel salesman are doing more than their share to help the company grow, for the opportunity it will provide them.

In addition, Fred Rives, the executive vice president in charge of operations, maintains a running analysis of every employee in the company on the branch level. He knows which men are doing a good job and which are capable of taking on larger duties. Thus opportunity is increased for the man on the firing line, for with such records at the hand of top management every man knows that he is considered a definite part of the big picture, and not just part of his branch or division operation.

In brief, then, Consolidated Gas Co.'s smooth running organization is based on the simple premise that a good business is made up of good men. When these good men are given responsibility, plus the freedom of action to carry out their responsibility, the result will be company growth and more opportunity for everybody concerned.

Watch for the next article in this series which deals with selling, advertising and public relations—and the men who make these tick.—Ed.





exclusive

PART 1 Servicing **Control Equipment**



**Where the full-time
salesman's job ends . . .**

**The service man's
selling job begins . . .**



The material presented in this article and those to follow has been prepared to assist the service man in efficient practices for the installation of control mechanisms, and to inform him regarding proper servicing of control devices normally used on LPG heating equipment.

**. . . for the installer
and the service man**

By Carl E. Smith

Manager of Service Division
Minneapolis-Honeywell
Regulator Co.
Minneapolis, Minnesota

I NSTALLING the job in the approved manner as recommended by local and national codes and practices approved by equipment manufacturers is the first responsibility that the service man owes to the customer and to his employer.

When a heating job is sold, your employer, or the salesman for your company, has convinced the customer that his purchase will provide comfort, efficient operation, and safety. Where the full-time salesman's job ends, your sales job begins. The continued success of your company depends on your ability to complete the transaction by making an installation that assures continued satisfaction.

After the installation is complete, advise the homeowner how to use his new equipment, pointing out those things which he should and should not do. The more he knows about the equipment, the better performance he will get from it and the more he will become sold on your company.

Finally, after a period of time, should the job require servicing, you can keep the customer's confidence by promptly correcting the source of trouble. Only your working-knowledge and common sense will help you

successfully complete your service call with a minimum expenditure of time and trouble.

In your approach to a servicing problem, however, it is well to remember that old controls—just as all mechanical devices—suffer from obsolescence and old age. In many instances it is impractical and uneconomical to restore an old, outmoded control to operation. Frequently a control of ancient vintage can be made serviceable, only to be the cause of a call-back later on. It, therefore, becomes a matter of personal judgment to determine whether it is better to patch up the old control or to point out to the customer the advantages of replacing the old device with a reconditioned unit or a new model.

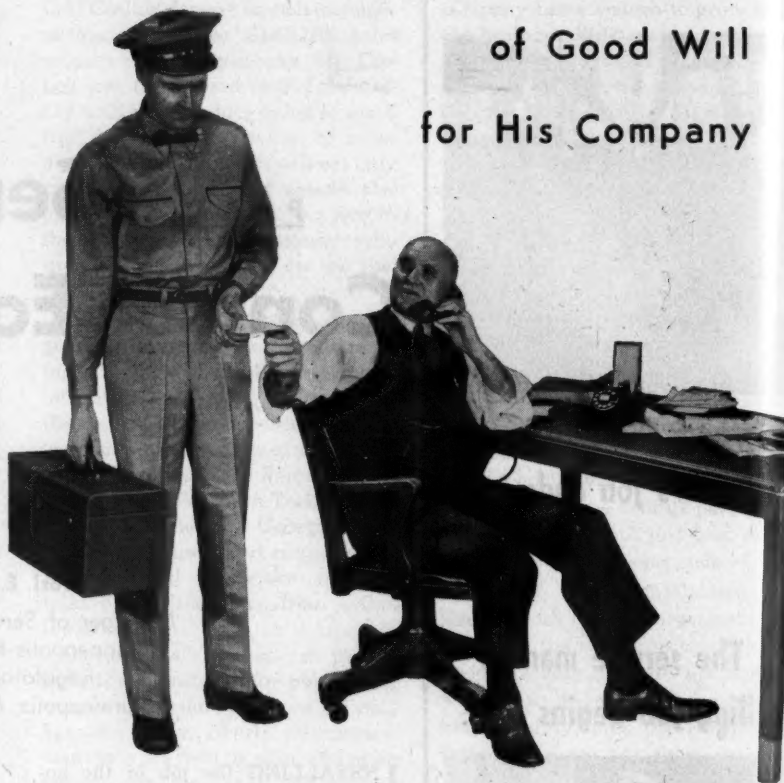
The life-expectancy of most controls is from ten to twelve years. Many engineering improvements have been incorporated in these units over such a span of years, and even if the control is repairable, there is merit in considering the slight cost difference between replacing the control with a reconditioned unit or a new model.

Thermostats being made today, for

example, reflect remarkable strides in mechanical improvement to provide refinements in heating comfort. In most instances where the homeowner has a manual thermostat, an automatic clock thermostat can be sold as a replacement. Fully automatic day-night control provides occupants with an additional comfort feature, while saving fuel as well. There are numerous other instances where the serviceman can advise renewal or modernization of various heating equipment.

You—as the serviceman—are the ambassador of good will for your company. In the eyes of the homeowner, you are the heating expert to whom they turn for advice. This is an enviable position of trust. While you have entree to more homes in a day than most heating salesmen have in a week, it is inappropriate to sell heating equipment while the customer is paying for time spent for a service call. However, a practiced eye for needed heating equipment and appliance in a customer's home can enable you to lay the groundwork for a sale that benefits both the customer and your employer. Later, when you return to the shop, prospect information can be passed on to the salesman.

The Serviceman is an Ambassador of Good Will for His Company



● Controlling Troubleshooting

The "No-Heat" Problem

This complaint could include problems too numerous to list here. All instances where control difficulties can cause a "no-heat" complaint will be discussed fully in connection with each group of controls.

Poor Temperature Control

Again, this problem could be the result of any number of conditions, but can most commonly be traced to one of three general faults:

1. *Not enough heat.* This could be caused by poor location of a control or some difficulty in the heating system itself. The burner or heating plant could be under capacity. Faulty distribution as a result of undersized ducts or registers, or inadequate layout of the system could be the fault. Obstructions in the duct or piping system, or an improperly balanced system could also cause this complaint. The most common trouble on

forced warm air systems is that air filters become clogged and require cleaning or replacement. Air filters should be replaced at least once each year, and in many installations—especially in newer homes—much more frequent change may be required during the first year, due to excessive dust from plaster or cement, also because of extra lint from new carpeting.

2. *Wide swings in temperature.* This condition may result from a number of causes. Most of them center around the thermostat.

- (a) Faulty or improperly adjusted thermostat.
- (b) Poor thermostat location.
- (c) Incorrect thermostat heater plug.
- (d) Un-plugged wall hole behind the thermostat causing un-natural air drafts to affect the sensing element.
- (e) Limit control set too low.
- (f) Slow system response.
- (g) Appliances such as a radio,

lamp, TV set, etc., located too close to thermostat.

(h) Drafts caused by frequent admission of cold outside air, plus structural characteristics of the house, including inadequate insulation, weatherstripping, lack of storm doors, windows, etc.

3. *Too much heat.* This complaint can often be a mis-interpretation on the part of the homeowner and could be mistaken for periodic over-heating as a result of wide swings in temperature. This problem is accentuated if the heating plant is over-capacity. Causes for wide temperature swings were covered in point No. 2. Other faults resulting in overheating:

- (a) Improper calibration of thermostat.
- (b) Too broad a differential adjustment on thermostat.
- (c) Improper heater plug—especially where differential is set wide and heater plug is of too low resistance.

(d) An unbalanced system that delivers excess heat to certain rooms.

(e) Short in thermostatic circuit or in relay, causing continual call for heat, except when limit control setting would be reached.

(f) Too high setting on limit control where day-night control is used. In such a case, a long morning pick-up period could result in over-shooting the temperature control point.

Burner Fails To Shut Off

Here again, is a situation similar to the "overheating" complaint. The trouble might be in the controls or due to some of the other faults listed in the previous paragraph. This trouble usually indicates a short in the

control circuit or welded thermostat or relay contacts. In rare instances, it is possible that the gas control valve could have deposits of some sticky foreign matter which overpowers the fail-safe feature designed in the valve.

Operating Troubles

These problems could include:

(a) *Short cycling* due to improper wiring of controls or the use of improper thermostat heater plug.

(b) *Noisy burner operation* caused by:

(1) Too high or too low rate of fuel input.

(2) Excess or lack of secondary air.

(3) Partially plugged pilot light.

(4) Gas leakage.

Some of these troubles are serious while others are merely nuisance service calls as a result of a blown fuse or some such simple failure. Your job is to prevent the service call in the first place, if possible, through having made a good installation and instructing the home owner. However, if service is needed, your ability to locate and correct the faulty condition quickly will keep service costs to a minimum, enable you to cover more calls, and generally improve customer relations. While you might not have had any formal training in electricity the typical domestic low voltage control circuit is relatively simple, and easily traced out.

• Simple Control Systems

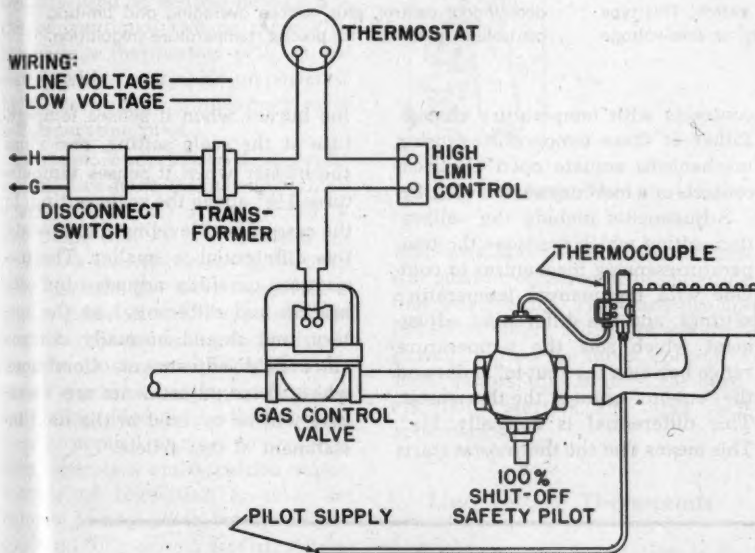


Figure 1—Simple control system.

Think of any control system on a house heating job as a very simple gas system as shown here. (See Fig. 1.*)

If you will think of the function of each control in this system, it will help when you are trouble shooting. Let's take, for example, a service call on no heat. Probably the first thing you do is to set the thermostat up to make sure that it is calling for heat. If you have a Tattlelite,** set the thermostat down to open the contacts, remove the cover and see if there is current across the terminals. If you

find that there is current, put a jumper across the terminal and see if it starts the burner. If it does, the difficulty is in the thermostat.

If you find that there is no current at the thermostat, leave the thermostat set so that it is not calling for heat. The next step is to use the Tattlelite on the low voltage terminals of the valve transformer to make sure that there is power at that point. If you find no power there, look for an open switch or a blown fuse. However, should you find that there is power on the line voltage side and no

power on the low voltage side, the transformer is dead and should be replaced.

If you found power on the low voltage side, there must be a break in the wiring from the transformer to the thermostat or valve. Contacts in the limit control may also be open. Remember, this is assuming that you found no current at the thermostat. If you had found current at the thermostat, the trouble would definitely be in the gas valve or the safety pilot. By looking at Figure 1 and thinking about the function of each part shown and their relationship, you can see how it would be a simple process of elimination to locate the source of trouble. More complicated control systems are basically very little different to trace out. They are simply basic systems to which some added functions are used such as the control of the fan on a forced warm air system or the water circulator on a hot water system. In some cases it may involve zone control with individual control of each zone or there may be added safety devices, all built around the simple control system.

*Service manuals, installation data sheets, and other literature showing detailed control circuits for specific control devices and systems are available through various control manufacturers and their branch offices or distributors.

**A low voltage test light available at most heating or electrical supply houses.

● Types of Thermostat Sensing Elements

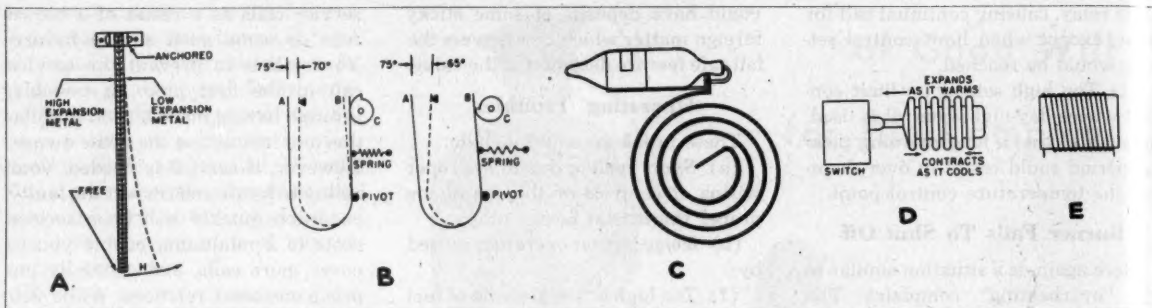


Figure 2—A. Simple bimetal element, showing principle of movement to provide switching action with temperature change. **B.** Typical arrangement of "U" shaped thermostat bimetal. Switching contacts are situated at the open end of the bimetal shown at point "A". "B" denotes differential adjustment, made possible by rotating cam "C". **C.** Coiled bimetal, actuating a mercury switch. **D.** Metal bellows with sealed vapor fill. Expansion or contraction of temperature-sensitive bellows actuates enclosed snap switch or mercury switch. This type thermostat usually used for heavy duty or line-voltage

applications. **E.** Temperature sensing element for electronic control consists of a simple spool of resistance wire. Slightest temperature change alters resistance in electronic circuit, thus initiating control action through an electronic relay amplifier. Chief advantage of electronic element is its exceptional responsiveness to temperature change, plus fact that two, three or more sensing elements (thermostats) can be connected in series to measure temperature at several points. This permits outdoor-indoor control, plus various averaging and limiting controllers essential to precise temperature regulation.

While all thermostats in a domestic heating system are temperature-sensitive switches designed to maintain indoor temperature at a comfort level, their similarity ends there.

Switching action on most thermostats is accomplished in one of two ways. The most common is the bimetal type. Its temperature sensing mechanism moves in one direction as it cools, and the opposite direction as it becomes warmer. The other most common method uses a sealed vapor-filled metal bellows that expands or

contracts with temperature change. Either of these temperature-sensing mechanisms actuate open electrical contacts or a mercury switch (Fig. 2).

Adjustments include the calibration setting which positions the temperature-sensing mechanism to coincide with the manual temperature settings, and the differential adjustment which sets the temperature range between the "cut-in" point and the "cut-out" point of the thermostat. This differential is normally $1\frac{1}{2}^{\circ}$. This means that the thermostat starts

the burner when it senses temperature at the scale setting, and stops the burner when it senses temperatures $1\frac{1}{2}^{\circ}$ above the scale setting. In the case of heat-leveling thermostats, this differential is smaller. Thermostats are carefully adjusted for calibration and differential at the factory, and should normally not require field adjustment. Conditions where these adjustments are necessary will be covered in the next installment of this article.

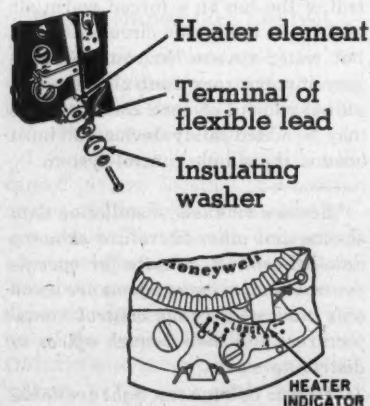


Figure 3—A. Plug-type heater and **B.** adjustable heater.

● Heater Elements

Heat leveling is used in most low-voltage thermostats. It is accomplished by tiny electrical resistances in the control circuit, located adjacent to the temperature sensing element in the thermostat (Fig. 3). When the thermostat calls for heat, current passing through the resistance (heater plug), causes a slight amount of artificial heat to be absorbed by the sensing element. In this way, the thermostat responds

more rapidly and stops the burner before any over-run in temperature can develop.

In the modern thermostats, a smaller amount of heat is applied directly to the temperature-sensing element. Since less artificial heat is used, heat is dissipated from the sensing element more rapidly, making possible shorter and more frequent heating cycles. As a result, closer temperature control is possible.

● Two-Wire Low-Voltage Thermostats

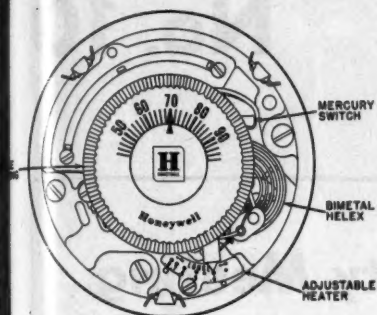


Figure 4.

Figures 4 and 4A — Two-wire low-voltage thermostats.

The Common Thermostat

The most common domestic thermostats used in central heating are the conventional two or three-wire low-voltage thermostats (Fig. 4) operating with a control circuit powered by a low-voltage transformer or a self-generating pilot.

Other more specialized thermostats include two-stage thermostats which operate the burner to first provide a low flame and as heat demand increases, a second contact is made to fully open the gas valve to provide a higher flame. Another type of thermostat combines heating and ventilating operations, while others are designed to provide heating, cooling and ventilating. Modulating thermostats, usually applied to zone control systems, operate a multi-position motor capable of regulating a valve or damper at any point between fully open and fully closed. Electric modulating controls operate on a balanced circuit (Series 90) which changes from one control position to another similar to a rheostat applied to modulate light intensity or control volume on a radio. The Electronic Moduflow thermostat (Series 70) which has no electric contacts, and operates entirely on changes in electrical resistances, will be discussed later.

Most low-voltage thermostats in use for home heating today are available with or without a clock mechanism. With the clock model, the homeowner can have lowered temperatures at night for comfort and fuel savings. Some clock models are the spring wound variety that must be

manually operated at night to lower the temperature to the night setting but which automatically return the thermostat to the day setting in the morning. Others use an electric clock and are therefore completely automatic in both lowering and raising the temperature settings at night and in the morning.

Thermostats are also available for numerous special applications such as green houses, brooder houses, and

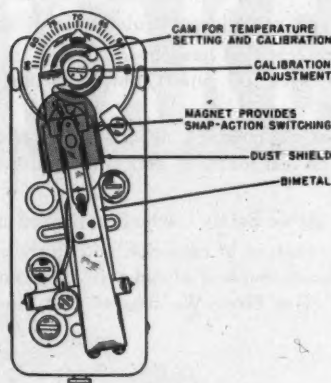


Figure 4A.

barn ventilators, where the thermostat must be constructed of materials that will not rust. There are also applications where a line voltage thermostat is used for direct control of small motors, unit heaters, gas burners, motor starters, and other such applications.

Line Voltage Thermostats

A common mis-application of the line voltage thermostat is where local codes require rigid conduit or BX wiring even on low voltage circuits. Some installers resort to a line voltage thermostat in such instances, even for a domestic application where comfort is a prime requisite. While the cost of a transformer or relay might be saved, temperature control is inferior. Most line voltage thermostats are of relatively rugged construction and are designed for applications where extremely close control of temperature is not required. In every case, the superior accuracy and faster response of a low-voltage thermostat is preferred for residential use.

● Electronic Thermostats

One of the most recent advances in thermostatic control for home heating is Honeywell's Electronic Moduflow. It is mentioned here because you as installers and servicemen should think of the entire Moduflow system as a special thermostat for the purpose of starting and stopping the burner.

The electronic Moduflow thermostat's sensing element is a simple spool of fine resistance wire. It has no moving parts, and requires no calibration or other adjusting. It is many times more sensitive to temperature changes than conventional thermostats. In addition to measuring room temperatures, the system uses an outdoor thermostat, known as the Weathercaster (Fig. 5).

The Weathercaster, mounted outside the house, senses outdoor temperature and compensates the control system accordingly. Therefore, as outdoor temperatures drop, it signals for a slight increase in room temperature, a degree or two above the tem-

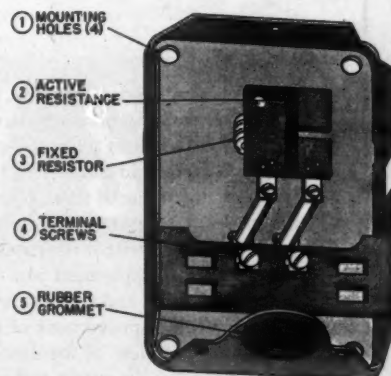


Figure 5—Electronic weathercaster.

perature setting of the room thermostat. This offsets the drafty condition and cold-wall effects usually noticeable in colder weather when a conventional temperature control system is used.

While Electronic Moduflow is used on all types of systems, it is particularly well suited for panel heating and zone heating applications. Except for floor panel heating systems, where a constant temperature setting is recommended, the electronic clock

(Continued on page 141)



Let's make SAFETY Everybody's Business

No. 10

Suggested Program for Safety Meeting

- 1—Get the attendance record, making particular note of absentees.
- 2—Are there any safety projects that have been cleaned up since the last meeting? Any still uncompleted? Give full report, not forgetting to give any credit that may be due to employees.
- 3—Ask for any new suggestions covering needed safety measures which may have been discovered since the last meeting, and take appropriate action for clean-up or investigation.
- 4—Discuss "Let's Always Drive Safely", which appeared in the October issue.
- 5—Announce date, subject, sources of material, and study assignments for the next safety meeting. The second meeting ahead will be devoted to the Control and Extinguishment of L. P. Gas Fires. We suggest that you start planning to have a demonstration.

DISCUSSION GUIDE FOR "Let's Always Drive Safely"

Most city police departments, and nearly all state highway patrol organizations have officers available who are glad to sit in with any groups interested in highway safety and accident prevention. Why not arrange to have one of these officers present at your meeting? We suggest that he be asked to give a brief talk as the final event of the meeting, drawing on his experience to supplement the information developed by the men, and making whatever suggestion he can for the improvement of the safety program and driving practices of the men. The ideal division of time between the guest and your own men is to give each enough to maintain their own feelings of importance. Try to create the spirit of working together to make driving safe.

Safe driving depends partly on good maintenance, and partly on good driving. Both phases depend on men. If your company has a maintenance department, the mechanics should by all means be in this meeting, and any plans for a safety contest discussed or developed at the meeting should include the participation of the maintenance staff in the rewards as well as the work. Their whole-hearted support is necessary for the success of the program.

In connection with Problem 1, written instructions for this inspection program should become a

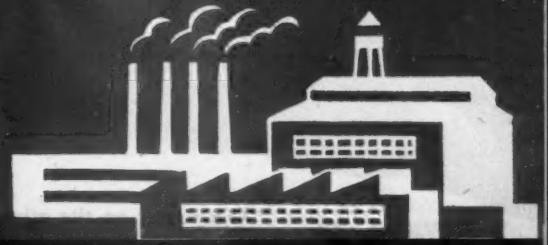
part of the working safety instructions of every gas distributing company. The routine should be set up by members of your own staff, who will take into consideration the peculiarities of your vehicles, what points should be checked and how, and the ground facilities for making the running tests. Large fleet operators in other lines have reported substantial improvement in safety records by following a similar program adapted to their operations. Why not start a committee on this job today?

Problem 3 is included but not answered for good psychological reasons. It has been found that the best way to maintain continuous interest in a safety program is through a contest. It has also been found that contests are most successful if the participants help to develop the plan and the rules. These contest programs are most successful if they combine the opportunity to get tangible rewards, like extra pay, extra days off, trips with expenses paid, etc. Recognition is also a necessary element of the contest. Division into teams, with team prizes or pay-offs and penalties helps to stimulate those whose interest might lag. And never underestimate the power of a woman in a men's contest. Employees' wives help to determine the outcome of every such contest. Their influence should be stimulated by the promise of participation in the rewards.

Let's make SAFETY Everybody's Business



LET'S MAKE EVERY



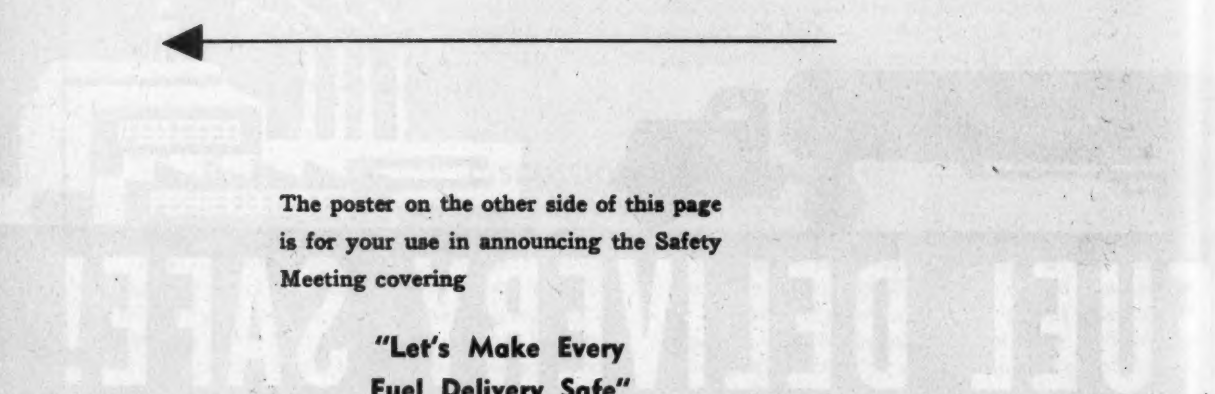
FUEL DELIVERY SAFE!



SAFETY MEETING



Date _____
Time _____
Place _____



←

The poster on the other side of this page
is for your use in announcing the Safety
Meeting covering

**"Let's Make Every
Fuel Delivery Safe"**

(See opposite page)

Fill in date and hour of your meeting, and
pin on bulletin board.

** Another poster comes next month.*

←

Let's make SAFETY Everybody's Business



The new delivery driver should be trained in company routine and servicing of appliances.



By Carl Abell

Let's Make Every Fuel Delivery SAFE

SAFETY can get to be a habit—for which we should be truly thankful. Which brings to mind the story of Joe Dokes.

Joe Dokes' wife ran away with the milk man. It wasn't that Joe didn't love her. He did, and he showed it in numerous little ways. He had provided her living expenses for ten years, and had even let her handle the family finances. Now and then, when he remembered, he told her that she looked nice. He even took her out to dinner or to the show occasionally. But he failed to develop one habit that could have insured the safety of his domestic arrangements. He did not tell her, as often as she needed to hear it, that he loved her. The milk man was more systematic. Every time he brought the daily quart into the service porch—

You get the point. The habit of doing things the safe way can and should become the driver's way of life. The right way should become so habitual that any deviation from the

set routine gives the subconscious feeling that something is wrong.

Consider, for example, the habit of blocking the wheels of the bulk truck. It is recognized that this is an essential safety precaution whenever the truck is stopped on a slope, whether or not it has the hose connected to a tank other than the one mounted on the vehicle. Serious accidents have happened in the past because emergency brakes did not hold, and delivery trucks have rolled down slopes and broken either their hoses or the fittings to which they were connected. So it has become universal practice to instruct the drivers to put the wheel chocks down to prevent the truck from rolling down the slope. "This is something you must do whenever there is a possibility that the truck may roll," says the boss. And during the past few months we have received several reports of trucks rolling away and breaking hoses or crashing into buildings because the wheels were not blocked.

Did the drivers in charge of those trucks deliberately ignore their instructions? That is doubtful. It is far more likely that they simply forgot about the blocks, because they had not established the habit of using them every time the vehicle was parked. Now let's take a look at Pamphlet 58, paragraph 3.15, Chock Blocks. It says:

"(a) Chock blocks shall be provided for the rear wheels and chained permanently to the vehicle. Such blocks shall be stored in suitable carriers when not in use. These blocks shall be placed at rear wheels to prevent rolling of the vehicle *whenever it is parked*, including loading and unloading operations."

The italics are ours, to call your attention particularly to those four words. They were included in Pamphlet 58 at the recommendation of the Technical and Standards Committee of the LPGA, which probably has the broadest understanding of the problems of handling and trans-

ferring LPG of any group in the world. Why, in the year 1953, do they say, "whenever it is parked," instead of "whenever it is parked on a slope?"

The answer is quite simple — because the only way we can be sure that the driver will use the wheel chocks every time they are needed on a slope is to train him to use them every time he gets out of the vehicle. Unless he has the habit of dropping the blocks *every* time, he has a second habit of not using them part of the time. One habit neutralizes the other, and so accidents are caused that could easily have been avoided had the driver developed the safety habit of *always* using the wheel chocks.

Let's consider another hypothetical case which brings up the importance of blocking the wheels, even on the level. Suppose that the driver is interrupted just as he finishes transferring fuel into a customer's tank. He might be wanted on the customer's phone to pick up an "out of gas" message from the office. Or the customer might be leaving, and desirous of paying for the delivery before she runs out of shopping money. Both those situations are pretty important, and the driver does what is necessary at once, intending to disconnect the hose and stow it on the truck after the interruption is taken care of. Then he forgets that the hose is still connected, gets in the cab, and starts to drive away. Don't laugh; you have probably done it yourself.

If the block has been placed where it should be — under the wheel in the direction that it will turn when the truck is driven away; it will probably kill the engine, but it will at least remind the driver that he has not finished his preparations for departure.

Many operators instruct their drivers to walk completely around the truck to see that everything is ready for the road, before getting in the cab to drive away. This is a highly commendable safety precaution, and the habit can prevent accidents. Drivers, being human, do not like to be surrounded by too many regulations, although they recognize that a certain number of them are necessary. The "walkaround routine" can be established without even mentioning it, if the wheel chocks are in-

Customers Are Unaware of Hazards — It's the Driver's Job to Spot Them



Underground tanks located above ground must always be suspected. This 100 psi working pressure tank was being served with high propane mixture. Weeds will be dry before next delivery.

stalled in the right place — at the right rear wheel.

Hoses are generally connected at either the right side or at the rear of the truck. Regardless of where the hose connection is located, if the driver has to go to the right rear wheel to pick up the wheel chocks, and is trained to go around the rear to get to the cab door, he will stumble over the hose unless he has put it where it belongs when he is ready to travel.

From the above we see that there are two reasons why the wheel chocks should be used — to prevent the vehicle from rolling while the operator is away from the controls, and to prevent it from being driven away with the hose still connected. While one chock will do both jobs a great deal of the time, there will be occasions when the truck would roll in one direction, but will be driven the other way, so two blocks are needed. In order to insure the fare-well inspection of both sides and the rear, both these blocks should be located at the right rear wheel.

Since the surest guarantee of safe operation is the establishment of habits based on the principles of safety, let us check through the delivery routine, and see what other possible safe habits we can discover or invent.

First, the delivery vehicle must be driven to the location from which the delivery is to be made. The National

Safety Council tells us that collisions with stationary objects are much more frequent while backing than while driving the truck in a forward direction. In some types of delivery work, it is known that more than 80% of these collisions occur while backing. Since we do not want to tear up our customers' buildings, fences, water pipes and shrubbery, and we do not want to damage the company truck by striking more substantial objects, it seems obvious that the truck should be driven forward wherever possible, and that when backing up, it is desirable to have some person on the ground to act as guide. If there is no other person available for that assignment, it is just good sense for the driver to get down on the ground and see how he is doing in case there is any possibility of going wrong. This is a vital precaution if there are small children in the yard. If backing can be avoided by carrying the hose a few feet farther, or wheeling a cylinder a little greater distance, it is good insurance to perform the slight extra work and stay safe.

Several of our largest and most safety-conscious operators train drivers in another worth-while habit of safety. Whether the delivery is being made in cylinders or in bulk, the driver is asked to always take a quick but thorough look at everything in the immediate vicinity of the tank or cylinder location to see that there are

no hazards which might lead to a fire or explosion, either then or later. People sometimes burn trash in open fires, or in incinerators, at locations too close to the fuel installations, or downwind where an unusually large loss of gas while filling a tank or making cylinder connections might flash back to the truck. Piles of combustible trash or heavy weed growth near the tank or cylinders might at a later date become ignited, and this could lead to overheating of the container, escape of gas through the pressure relief valve, and a serious fire.

Keep Truck Close

The truck should always be close enough to the tank so the hose will not be stretched in making the connection. It is very difficult to make a connection that does not leak when using a tight hose, and when the pump pressure comes on, the hose tends to shorten, thus straining the valve or fitting on the tank. And if the truck rolls just a little against a stretched hose, something is going to give.

In pioneer bulk territories, where tanks were originally built for storage of butane, and where some of the old low pressure tanks are still in use, there is a very special hazard. Distributors in such areas generally use twin-barrel bulk trucks, with one tank filled with butane and the other with propane. The new high pressure customer tanks may be filled with either product, as the working pressure and relief valve setting are adequate for propane, and present a wide margin of safety over the storage requirements of butane. But the butane tanks should not receive propane, not any mixture of butane and propane which might have a vapor

pressure approximating the setting of the pressure relief valve on the butane tank, as this incurs the risk of blowing off a large amount of fuel vapor when temperature brings the fuel up to the opening pressure of the relief valve.

The driver should look carefully at the data plate on the customer's tank to make sure which product should be delivered, and no high pressure product should ever be put into a low pressure tank. One southwestern operator had a new driver who did not understand clearly the principles of vapor pressure in L. P. gas, so he found out the hard way. He received an "out of gas" call requesting delivery to a \$12,000 summer cottage. The route sheet and the plate on the tank both told him that this was a butane customer, but his butane supply was gone. He did not want his customer to be out of fuel, and did not want to drive all the way back to the plant to pick up more butane. Figuring that a little propane would only develop a little pressure, he put 20 gallons in the customer's 250 gallon tank, planning to come back in a few days and complete delivering at 1000-gallon order for butane. Returning two days later, on a hot, dry, windy day, he found that there was nothing standing at the site of the house but the butane tank and a blackened chimney, and that the fire had progressed a couple of miles across the mountain. The pressure relief valve had discharged because the propane had developed its normal pressure as the temperature went up. The wind had carried the gas to a source of ignition in the house. Butane would not have caused this fire, because it would not have developed enough pressure to pop the relief valve.

The manager of the company then took extra precautions with all the remaining butane tanks that he served. Personally visiting these customers, he succeeded in replacing most of the old tanks with modern propane tanks. The remaining butane tanks were clearly marked with a large red "B," and orders were issued to the drivers that delivery of any product other than straight butane into any of the marked tanks would result in immediate discharge.

Tanks should never be vented to atmosphere to speed up the fuel transfer. This wastes the customer's gas, and creates a hazard by releasing an unnecessarily large amount of

fuel vapor into the air. But the greatest hazard of this procedure is the possibility that the driver may misjudge the speed of filling, and raise the liquid level in the tank to the base of the vapor valve, discharging a large amount of liquid fuel into the air. This may not have a chance to disperse thoroughly before it reaches a source of ignition. This has happened in a number of instances, resulting in loss of life and property.

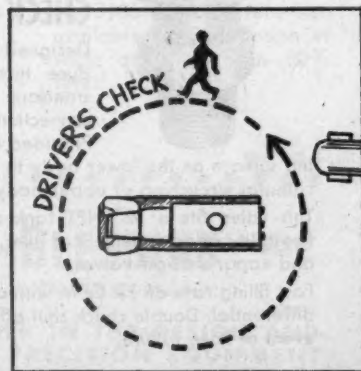
Overfilling tanks is another serious hazard. The legal level for filling is established to provide a cushion of compressible vapor above the liquid in the tank. If the proper vapor space has been provided, the expansion of the liquid as the result of rising temperature will never completely fill the tank. Vapor is compressible, but liquid is not. As its temperature goes up, it continues to expand, and if the volume of liquid in the tank completely fills the interior space, any additional rise in temperature will force liquid out the pressure relief valve. A small amount of liquid makes a large amount of vapor, and the hazard increases with the volume of the vapor that escapes.

Don't Fill Illegal Tanks

Now and then a customer asks to have a vessel filled which, either by design or installation, is illegal. Every legal vessel, whether it be ICC, ASME, or API-ASME, is clearly marked with the code under which it was constructed. If there is no marking on the cylinder or tank to prove that it was made to code standards, the person who fills it with L. P. gas is legally liable if any accident results. And it can happen. The non-code containers may not have sufficient strength to withstand the pressure,



Wheel checks should be carried in convenient place, and used at every stop.



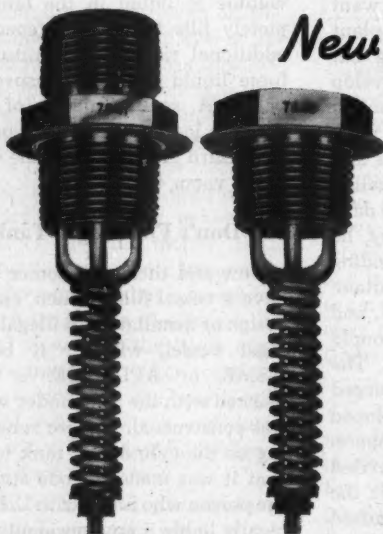
The "walkeround" routine shows whether everything is ready to travel.

REGO[®] CONTROL EQUIPMENT for MOTOR FUEL CONTAINERS

FEATURING THESE *New* REGO VALVES

Developed specifically for motor fuel containers . . . the design and operating advantages of these valves are yours when you specify RegO . . . **VIBRATION PROOF**—built to withstand vibrations. **MINIMUM PROJECTION**—fit close to container to reduce hazards of breakage. **RECESSED MECHANISM**—protected inside container. **UL LISTED**—tested and listed by Underwriters' Laboratories, Inc.

New! REGO SAFETY RELIEF VALVES



These new RegO Safety Relief Valves are designed so that the valve mechanism is recessed within the container. This provides maximum protection should the vehicle be in a collision.

The RegO No. 7540 and No. 7541 relief valves are identical except that the latter is furnished with a 1" pipe-away thread for the connection of a vent conduit so that the relief discharge can be directed as desired.

SPECIFICATIONS

Pipe Size	Setting Suffix	Start-to-Discharge Pressure Setting	Rate of Discharge (LP-Gas)
1"	"G"	250 ⁺⁰ ₋₁₀ psi	845 cfm
1"	"T"	312 ⁺⁰ ₋₁₀ psi	1100 cfm



New! REGO DOUBLE CHECK FILLER VALVE

Designed to speed filling, reduce hazards and to take standard 1 1/4" Acme hose connection for tank refueling. Provided with only one wrench-

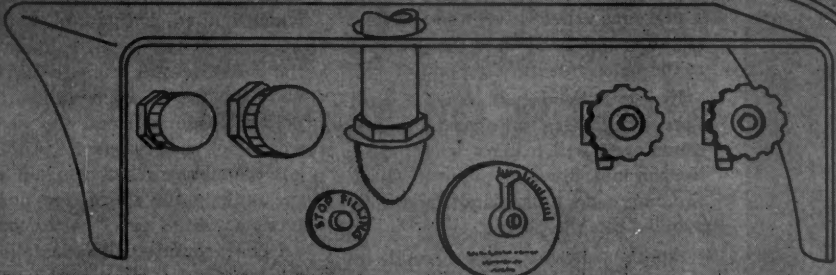
ing surface on the lower body to avoid excessive accidental wrenching of upper body during installation. This valve fits a 3/4" NPT tank opening, permitting flexibility of arrangement of filler, vapor return, liquid and vapor shut-off valves.

Fast filling rate of 19 GPM with only 10 psi pressure differential. Double check shut-off for extra safety in event of hose failure.



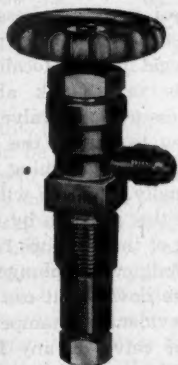
New! Rego Vapor and Excess Flow Valve

This valve is designed to fit 3/4" NPT tank opening and offers the same safeguard against wrenching damage as the RegO Double Check Filler Valve. It takes standard 1 1/4" Acme hose couplings now in general use and is equipped with an excess flow valve which shuts off automatically should hose rupture.



There are three important reasons why RegO should be standard control equipment for your motor fuel containers.

1. *Correct type of equipment*—RegO's complete range of equipment fills all container requirements for all mobile and stationary engine installations. 2. *Safety*—Every RegO valve is designed for a specific use and is thoroughly laboratory and field tested. 3. *Dependability*—RegO equipment is time tested by the LP-Gas Industry. It is rugged in design and construction and is proven in service.



REGO LIQUID SHUT-OFF VALVE

No. 3101H6

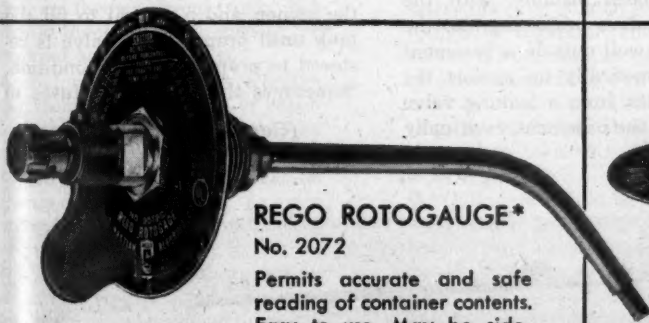
Positive opening and closing. Leak-proof diaphragm construction provides safe, trouble-free operation. Inlet— $\frac{3}{4}$ " NPT, outlet— $\frac{3}{8}$ " SAE flare. Equipped with integral excess flow valve and inlet adapter for dip pipe.



VAPOR SHUT-OFF VALVE

No. 3101H5

Full opening and positive shut-off with leak-proof diaphragm construction for long, trouble-free service. $\frac{3}{4}$ " NPT inlet, $\frac{3}{8}$ " SAE flare outlet. Built-in integral excess flow valve for added protection.



REGO ROTOGAUGE*

No. 2072

Permits accurate and safe reading of container contents. Easy to use. May be side-mounted at 90% level, or center-mounted on side or end. $\frac{3}{4}$ " NPT tank connection.



FIXED TUBE LIQUID LEVEL GAUGE

No. 3165

Determines when container is filled to maximum permitted level. Spring clip keeps valve from opening even under severe vibration.

No. 3165F with dip tube also available for installation of valve at other than 90% level.

*Reg. U. S. Pat. Off.



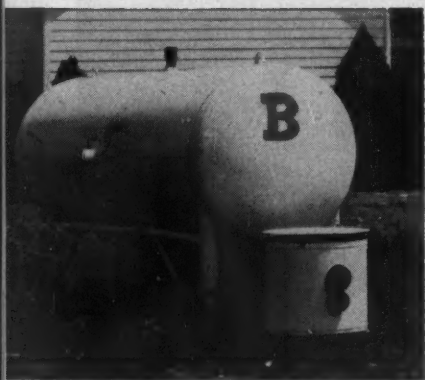
REGO
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GAS EQUIPMENT CO.
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PIONEER AND LEADER IN THE DESIGN AND MANUFACTURE OF PRECISION EQUIPMENT FOR USING AND CONTROLLING LP-GASES

Let's Make Every Fuel Delivery Safe



Tanks marked with red "B" warn driver against delivering high pressure fuel.

or they may not have the necessary protective valves, so almost anything can happen.

A typical case of non-code tank trouble recently occurred in California. A farmer wanted to convert his tractor, as inexpensively as possible. At the second-hand store he found a pressure tank that was the right size and shape, and had some threaded connections. He cobbled up a set of plumbing which enabled him to fill the tank and connect it to the carburetor, mounted it on the tractor, and went to work in the field. At lunch time he drove the tractor into the yard and stopped the engine. About the time he finished washing his face, there was a terrific explosion in the yard, and a flash of fire enveloped the place. Fortunately the buildings did not burn, but considerable explosion damage took place

The tank had not been equipped with a pressure relief valve, and the heat of the engine had raised the pressure in the tank to its bursting point.

Now and then a customer will want "just a little gas" in a portable container, and will bring a war-surplus oxygen tank in which to put it. These are not code tanks, and should be avoided like the plague.

Another hazard that should be avoided is filling of systems which are located in illegal places. Pamphlet 58, and all the state and local codes that we have seen, specifically forbid the installation of tanks and cylinders in buildings. There is sound reasoning behind this—a fire might start in the building close to the storage container, and if the resulting heat causes the pressure relief valve to pop, the escaping gas will ignite and feed the fire. One of the worst fires in L. P. gas history occurred because a plumber brought some filled cylinders into his shop, which was in the basement of a large apartment building. A minor fire started in the shop, and the pressure relief valves on the cylinders started to pop, kindling the entire building.

Another case of a legal tank in an illegal location was brought to light when a gas explosion in a basement wrecked a restaurant building. The tank had been installed with the head and valves projecting into the ventilating well outside a basement window, practically up against the building. Gas from a leaking valve seeped into the basement, eventually

forming a combustible mixture, which ignited. If this tank had been installed at the legal distance from the building and from the window-well, the gas would have been completely dispersed, and the accident would not have happened. And if the gas distributors had refused to fill the tank in the illegal location, the accident would never have occurred.

Underground tanks installed in aboveground locations may or may not constitute a hazard. They are generally made for low working pressures, with relief valves set accordingly. When buried beneath two feet of soil, as specified in most codes, the temperature remains low even in the hottest weather, and a mixture containing a high percentage of propane is safe in the typical underground tank of 100 psi working pressure. While it is permissible under pamphlet 58, and legal in many localities, to install this same tank above ground, the pressure relief valve setting is too low to permit the safe storage of mixtures containing propane. Occasionally someone will attempt to solve this problem by raising the setting of the pressure relief valve, or by wedging the plunger of the relief valve down so it can not operate. Any evidence of tampering with the relief valve on any LPG tank should lead to an explanation to the owner, and a refusal to fill the tank until proper relief valve is restored to proper working condition. Sometimes the customer refuses to

(Continued on page 85)

Cylinders should be carried in vertical position, and anchored securely in place.



Bulk truck equipped for safe operation and quick, convenient delivery routine.



STEP BY STEP PROCEDURE: CHANGING CYLINDERS



Cylinder truck equipped for side or rear loading and unloading saves time in making deliveries.



Cylinders, full or empty, always have valves protected, are carried vertically and securely anchored in place.

1. Full and empty cylinders should be loaded and carried on trucks in upright position, and securely anchored or chained to prevent shifting or falling.
2. When delivery truck can not closely approach cylinder installation, hand truck should be used to carry cylinders. Leave weight lifting demonstrations to the athletes.
3. Cylinders should not be dropped or thrown from truck, but should be eased to the ground, or lowered onto shock pads.
4. Before disconnecting a cylinder from the house line or manifold, the cylinder valve should be closed.
5. No cylinders should ever be changed without using proper wrenches to fit the cylinder connections.
6. The cylinder valve connection should be disconnected slowly, allowing pressure to bleed down before entirely removing the nut. If pressure does not reduce, the cause of leakage should be found. If necessary, other cylinders

should be shut off to prevent escape of high pressure gas.

7. The cylinder valve and connections should be examined for condition of threads, and those with worn or burred threads should be replaced. Any dirt on either the connector or the cylinder valve should be removed.
8. Each time a cylinder is changed, the driver should make a quick safety check of related equipment—pigtaills, regulator, change-over valves. If accumulation of rubbish, or other hazardous conditions, exist in proximity to the installation, the customer should be requested to take corrective measures at once.
9. Cylinders should be set plumb and square, and when hoods or cabinets are used, proper closure should be made.
10. After the full tank has been set and connections made, the tank valve should be opened and connections checked for leaks.
11. If it becomes necessary to shut off the entire gas supply to

the house line, as when changing a single cylinder installation, or while repairing or replacing a regulator or change-over valve, gas should not again be turned into the house line until all appliance valves have been turned off.

12. If the customer is not at home when it has been necessary to turn off the gas to the house line, a card or note should be left advising that full tank has been delivered, and gas is shut off at the regulator, and instructing the customer to turn off burners and pilot lights before turning on the gas.

13. Protector cap from filled cylinder should be placed on empty cylinder before moving it to the truck.

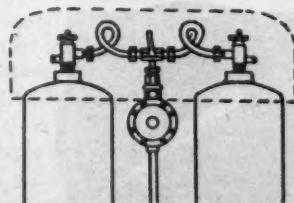
14. In case a relief valve on a cylinder opens while being transported or set, the cylinder should be moved to a safe place and vented until the pressure is lowered. Cylinder should then be returned to the plant for reconditioning of valve.



Use hand truck if cylinder must be moved across customer's yard.



Cap goes on empty cylinder when it is taken off filled cylinder.

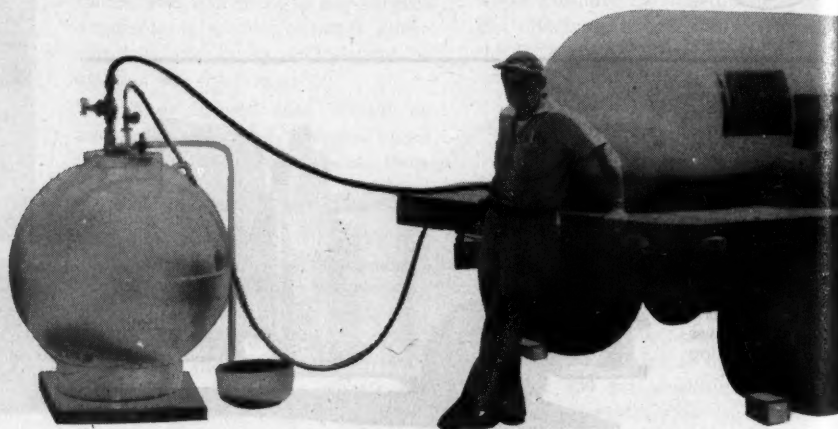


Manifold and regulator should be checked for leaks and condition at every delivery.



STEP BY STEP PROCEDURE: FILLING CUSTOMER TANKS

The bulk delivery driver should stay where he can observe entire filling operation.



1. Truck is parked in location within easy hose reach of the tank; engine is shut off and wheel blocks set in place to make vehicle secure.

2. Driver makes quick visual check of immediate surroundings of tank for rubbish fires or any other hazards.

3. Driver checks consumer tank gauge to estimate approximate delivery. If tank is found empty, outlet valve on tank is closed to prevent gas from going into house piping before check is made for open burner valves.

4. Liquid and vapor return hoses are connected to tank, and hose valves are opened slowly.

5. Connections are checked for tightness, and if any leaks are evident hose valves are closed and connections tightened, or remade, to prevent leakage of fuel at tank.

6. When connections are secure at customer tank, driver returns to truck, opens liquid and vapor return valves on truck slowly to prevent excess flow valve from closing, starts engine, connects

pump, regulates engine speed for proper pumping rate, and returns to customer tank, watching gauge to prevent overfilling.

7. When gauge indicates that level for filling is near, driver starts to top off tank by gradually closing valve on liquid line, and shuts valve completely when fill level is reached. He then closes vapor return valve, returns to truck and stops pump, stops engine, closes vapor valve, and closes liquid valve, in that order.

8. Driver returns to customer tank and opens bleeder valve between hose valve and tank connection, to check for leak before disconnecting hose coupling.

9. If bleeder valve continues to blow, hose should not be disconnected until source of pressure is found and corrected to prevent escape of uncontrolled gas to atmosphere.

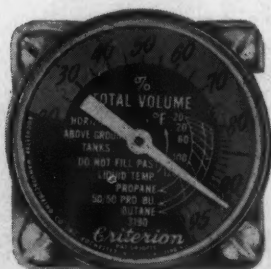
10. When no pressure is shown at bleeder valve, hoses may be disconnected, and caps replaced on tank connections. Hoses should then be reeled or racked on truck

to prevent driving off with hoses hanging.

11. Driver makes out delivery ticket, and presents it to customer if latter is at home. If it was necessary to shut off house supply due to empty tank, driver checks all appliances in house to close open valves, then opens tank valve to regulator, returns to house and lights pilots, if any, to prevent possible hazard of gas escaping into house.

12. If customer is not at home, driver leaves note with delivery ticket, advising that tank has been filled, that house line has been shut off at tank, and that customer should check pilots and appliance valves to prevent accidents in house before turning on gas. (This only applies if it was necessary to shut off service valve at time of filling.)

13. Driver returns to truck, makes circuit to see that hoses are taken care of, valves closed, tool box cover in place, truck cabinet doors, if any, closed. He puts wheel chocks in their carriers, and is ready to go.



Calibrated gauge dials show when to stop filling for safe storage.

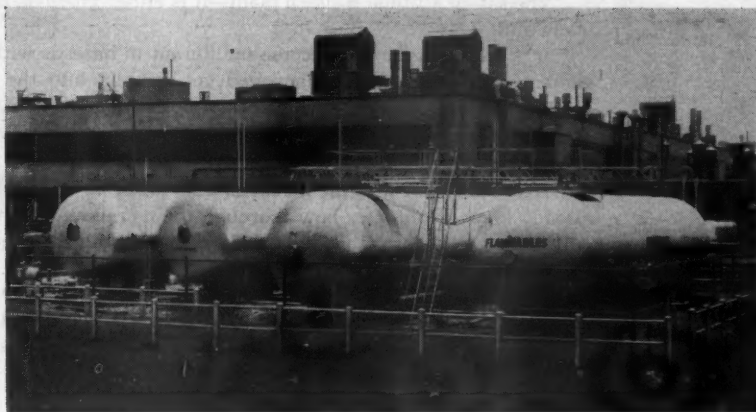
Illustrations of valves and fittings by courtesy of Selwyn-Landers Co. Similar valves are available from other manufacturers.



EXTRA PRECAUTIONS FOR COMMERCIAL AND INDUSTRIAL DELIVERIES

In addition to the customary precautions taken in making a delivery to a domestic installation, additional steps are recommended for making the commercial or industrial delivery safe. These are determined by the traffic and ignition hazards of the particular location. The following points will suggest the necessary range of precautions:

1. When truck unloading spot is located where normal plant traffic is accustomed to travel, "detour" or "road blocked" signs should be set out to prevent passage or collision from plant vehicles.
2. To prevent possible interference with plant operation, plant employee in charge is consulted as to readiness to take delivery before beginning fuel transfer.
3. Where open fire operations are going on in the near vicinity, operators are alerted that fuel transfer is about to be made, so precautions can be taken in event of an accidental fuel spill.



4. When deliveries are made from alleys to industrial storage, or to roadside businesses from spots open to public traffic, truck should be parked in the clear if possible, and warning signs or barricades should be placed to prevent collisions or other accidents.
5. When dry hose is used to transfer, care should be taken to blow down hose through vent line

to safety valve stack or to some place in the open where safe dispersion can take place.

6. Where water heaters, boilers, vaporizers, or other possible sources of ignition are located close to unloading station, doors should be closed, and kept closed, until unloading operation has been completed, to prevent seepage of dispersed gas to sources of ignition.

Every Fuel Delivery Safe

(Continued from page 80)

play safe, and seeks one of your competitors to serve the tank. If you have that kind of competitor, it is a good idea to let him take the account.

Every delivery man should understand the fundamentals of gas appliance service, and be able to perform necessary minor adjustments on customer's appliances. He should carry test equipment, so he can immediately handle complaints of gas odors in the house by conducting a pressure test to locate and correct all leaks.

Trouble is sometimes experienced with check valves in the filler con-

nection of the tank, on account of dirt, mud, or ice that gets in from the filler hose. The end of the hose should never be dragged on the ground—it should be carried to the tank, and back to the truck, even on trucks equipped with power driven hose reels. As a further precaution against getting dirt in the hose connector, some operators mount a blind fitting on the truck where it will be convenient to attach the hose nozzle while in transit. This is a splendid idea.

From the above discussion, it is evident that the delivery driver shoulders an important responsibility, and that it would be highly dangerous to turn a new driver loose on a delivery route before he is prop-

erly trained in the safety aspects of his job. Most operators handle this safety training by sending the new driver out for a period of from three weeks to a month with a veteran driver who has demonstrated his understanding of safety and his ability to train other men. Pertinent codes and printed instructions are studied concurrently with the daily experience on the job, and effort is made to build safety habits on a sound foundation of understanding of the nature of L. P. gas.

It is this understanding that is all important in safe operation, because it gives reason to habit, which takes care of the routine situations, and provides the basis for judgment which is necessary for emergencies.

Problems For Discussion At Eleventh Safety Meeting

This month we discuss the phase of L. P. gas operation which has received the most attention in training for safety since the beginning of the industry. Veteran delivery men may feel that, for them, this is wasted effort—that they already know all about the subject.

Perhaps they do—and certainly they should. They may find nothing new in the entire contents of this study assignment. There are still sound reasons why this material should be gone over, not just this once, but periodically as long as those drivers are employed to deliver gas.

The safety attitude is like a plant—it is either growing, or it is dying. It does not stand still.

It is human nature to become indifferent to hazards with which we are in daily contact. Since nothing has happened yet, we slip into the unconscious belief that nothing ever will happen—which is the perfect background for tragedy. Regardless of how much the employee knows, he still needs periodic reminders, so he will not relax his vigilance.

New men come into the business. They must be taught what the veteran drivers already know. No matter how thorough their preliminary instructions may be, they will continue to learn from their daily contacts with the other men. It takes time to make a safe delivery driver.

Safety in making gas deliveries comes from knowledge of the product and the details of the job, from firmly established habits that result in constantly following a safe routine, from constant alertness to detect conditions which may be or may become unsafe, and from ripened judgment which leads to correct action in emergencies.

These problems do not cover all of the subject of making safe deliveries. We hope they will stir up discussions which will keep old and new drivers mentally alert and constantly "on the beam".

Problem 1

A driver making a delivery has "stretched" his hose to make a connection, instead of moving the truck a little closer to permit the hose to lie slack. The wheel chock is not quite in contact with the tire, and when he connects the power-take-off the truck rolls forward, away from the tank, about an inch, breaking the filler fitting off at the customer's tank. Describe in detail the hazard that would be created, and tell what you would do. What would be necessary to put the customer's tank back in service?

Problem 2

In some parts of the United States there are numerous dealers who do extensive "cash and carry" business in filled cylinders in both 100 lb. and 25 lb. sizes. The purchaser of the gas does his own cylinder changing. This method of selling gives the customer the advantage of a lower price on gas, as it eliminates delivery costs for the dealer. From the standpoint of safety, what do you think of it?

Problem 3

Fires and explosions in house trailers are more frequent than in domestic installations that have been put in and are serviced regularly by L. P. gas distributors and dealers. This is one of the most serious problems of our industry. How are the trailer residents in your community buying their

gas? Do you think this supply system has anything to do with accident frequency? What can you suggest to eliminate the hazards that are now created in connection with the house trailer gas system?

Problem 4

Pamphlet 58 specifies that on storage tanks of over 2000 gallons capacity, the pressure relief valves on underground tanks must be vented directly upward through a pipe extending at least 7 feet above the ground, and the relief valves on aboveground tanks shall be vented directly upward to a point at least 7 feet above the container. Why are these provisions considered necessary and safe?

Problem 5

Why should the liquid valve at the pump end of the hose be closed after instead of before the pump is shut off?

Problem 6

What should the driver do if he discovers that he has overfilled the customer's tank?

Problem 7

Describe in detail the proper routine for preparing the truck that you drive for departure from the location where you have just made a delivery.

SEE PAGE 138 FOR ANSWERS TO LAST MONTH'S SAFETY PROBLEMS



Metering LPG.

PART 3

Repair and Maintenance of the LPG Meter

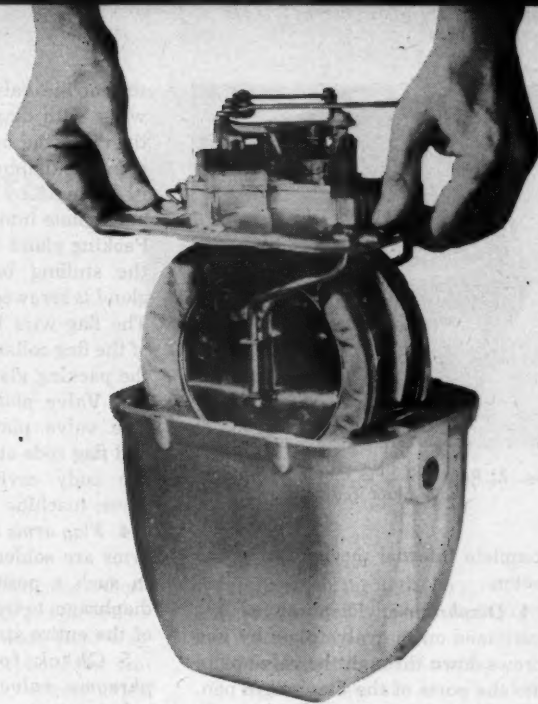


Fig. 1. Valve plate assembly being removed from meter body.



By **L. A. McGowan**

Chief Engineer
Pittsburg Du Bois Division
Rockwell Manufacturing Co.

THE LPG meter design permits trouble-free service and easy repair. There are no hidden spots for the repairman. The entire top mechanism becomes accessible when the cover is removed. Other details of design and construction are as follows:

1. The housing castings are made of a high pressure aluminum die casting.
2. Adjustment is made easy through the handhole plate in the cover.
3. The tangent is of the block type, permitting adjustments with a 5/16-in. wrench for valve timing and diaphragm stroke.
4. The tangent post and flag arm studs are equipped with snap rings for ease in removal of tangent links and bushings.
5. Powdered metal bushings and bearings are used at the majority of bearing points to provide for longer life and bind-free operation.
6. The bracket assembly includes a crank, tangent, valve links, and valve covers; all of which can be removed by removing the bracket mounting screws.
7. The two-piece housing design provides only one exterior sealing surface.

Every effort has been made to give the meter a longer and more accurate

life, at the same time making parts in such a way that the meter can be repaired whenever necessary at the least possible cost.

Repair Procedure

Disassembly

1. **Removal of handhole plate, index box, index and cover.** The handhole plate is secured by four machine screws, the index box by four screws, the index by two screws and the cover by eight screws. It is necessary that the index box and the index be removed before the cover can be removed. Once the cover is removed all linkage above the valve plate is accessible to any adjustment or removal of parts. Clips on the tangent post and flag arm stud allow for easy removal of links and bushings.
2. **Crank bracket assembly.** This assembly can be removed as a unit by removal of two mounting screws, or the valve covers can be removed individually by taking out the valve guide screws—one for each cover.
3. **Valve plate assembly.** This assembly includes the flag arms, flags and diaphragms which may be removed as one unit by removal of seven machine screws through the valve plate into the body. We supply these plate assembly units which can be placed in the meter to replace the



Fig. 2. Rockwell LPG meter with hand-hole plate removed.

complete internal mechanism of the meter.

4. *Diaphragms.* Diaphragms are positioned on the valve plate by two screws down through the valve plate into the ports of the diaphragm pan.

5. *Flag and flag arm assembly.* The flag arms are removed from the flag wires by melting the solder. Once the flag arms are removed the flag stuffing box can be removed from the valve plate for replacement of new packing gland felts or gland. (Packings themselves can be replaced with split felts without disassembly of flag arms by removing the pin in the flag collar and turning out the gland.)

During the disassembly, all parts should be thoroughly cleaned and inspected for excessive wear. Malfunctioning parts or worn out parts should be replaced. The diaphragms should be inspected for leakage and the presence of a sufficient quantity of oil. Leathers can be easily replaced since they are held in position by a simple diaphragm clamping band. They can be easily re-oiled by swabbing or dipping in a warm oil dressing.

Assembly

1. *Valve seats.* The bottom surface of the valve seats is given a ground finish, then shellacked on this surface for sealing before placing on the valve plate. The valve seat is automatically located in its correct position with respect to the valve plate by use of flat head machine screws.

2. *Diaphragms to valve plate.* The flag wires are first attached to the right and left hand diaphragm pan assembly by use of drive pins through the flag collar and flag rod. A body gasket is placed on the bot-

tom of the valve plate, and the flag wires with diaphragms attached are then inserted up through the stuffing box. The diaphragms are permanently secured by screws through the valve plate into the diaphragm ports. Packing gland felts are inserted into the stuffing box and the packing gland is screwed into the valve plate. The flag wire is located by pinning of the flag collar to the flag rod above the packing gland.

3. *Valve plate assembly to body.* The valve plate, with diaphragms and flag rods attached, is placed into the body cavity and fastened by seven machine screws.

4. *Flag arms to the flag wires.* Flag arms are soldered on the flag wires in such a position to facilitate the diaphragm to travel in its mid-portion of the entire stroke.

5. *Check for leakage of diaphragms, valve plate to body seal, valve seat to valve plate seal, and partition and channel leakage.*

6. *Grind the valve seats.*

7. *Bracket sub-assembly.* This sub-assembly consists of tangent, crank, links and bracket. The links are first slipped down the crank to their proper position on the crank throw. A 1/16-in. brass washer is inserted between the links for better bearing. A drive pin is inserted in the crank to prohibit links from lifting off the crank throw. The crank is then inserted up through the bracket, and the tangent is soldered in a position to provide for an advancement of the tangent in a clockwise direction of approximately seven degrees from the crank throw.

8. *Mounting of bracket assembly.* After grinding of the valve seats, bracket assembly consisting of the bracket, crank, valve links and tangent is mounted. This bracket assembly should be mounted to permit bind-free crank rotation and will be correct when the crank bracket bearing is directly above the step bearing in the valve plate.

9. *Fitting.* Valve covers are re-ground and located on the valve seats. The crank end of the covers are wire guided in powdered metal inserts in the crank bracket. The other end of the cover has guide slots through which guide screws mounted in the crank bracket guide the valve in its travel.

The valve links are pinned to the valve covers and checked for proper length by the amount of web show-

ing during the cover travel. If care has been taken in the assembly thus far, very little or no adjustment should be necessary. However, to insure proper timing .030-in. of the exhaust web closest to the crank should be uncovered when the valve cover is at the extreme "out" position of its travel. This uncoverage is caused by an angularity which is present in all direct linkages of this nature and presents no problem since sufficient sealing between the cover and seat still remains at this amount of uncoverage.

Secure the tangent links and bushings to the flag arm studs. The diaphragms should be checked for proper stroke. This can readily be checked by placing the diaphragm in its extreme end of stroke; then placing the tangent link over the tangent post. At the two extremes of diaphragm travel there should be a clearance of at least one-half the tangent link-hole diameter between the tangent post and the tangent link.

For proper balance the distance from the centerline of the crank to the tangent post should be as close to 7/8-in. as possible.

Connect the tangent links and check the entire assembly for binds and freedom of operation.

10. *Replace the cover gasket and cover, index, index box gasket and index box.* When mounting the index be sure that a good mesh is had between the stuffing box and the index drive gear.

11. *Prove the meter.*

12. *Replace the handhole plate gasket, handhole plate.*

13. *Final water test for external leakage.*

14. *Low-lite test.* This test is made, not for accuracy, but to determine if the meter will register a flow as low as 1/4 cfh.

15. *Seal, wash and paint the meter.*

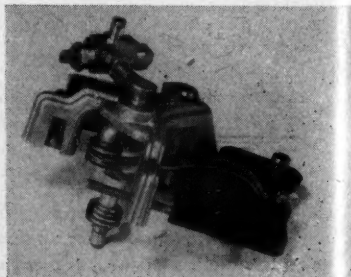
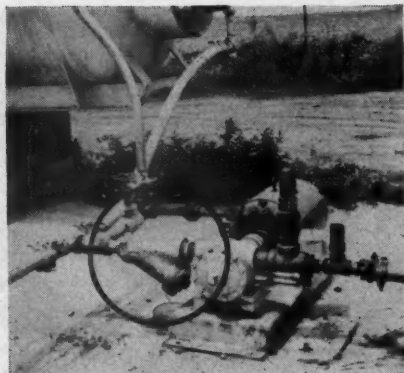


Fig. 3. The crank bracket assembly.

Attention to Strainers Can Cut Pump Repair Costs

By Lawrence Smith
Chief Engineer
Smith Precision Products Co.



Typical pump installation is shown with strainer appearing in circle.

SINCE June, 1950, nearly half of all pumps returned to our factory for repairs have shown damage caused by foreign matter that has entered with the fuel handled. This damage is unnecessary, as it can be eliminated by giving attention to installing a proper strainer in the liquid line ahead of the pump.

The purpose of this article is to describe the effects of foreign matter on a pump, to explain what we consider is a proper strainer, and to tell how this strainer should be used. It is our belief that if these simple facts can become well understood by those of us in the industry who work with pumps, half of all pump repair costs can be saved.

The foreign matter that we find in pumps returned to the factory is usually weld-shot, tank or pipe scale, or sand and gravel. Weld-shot is most common in pumps that have been installed with new tanks. All modern storage tanks are of welded construction, and it is usual to find some weld-shot in them, even those thought to be thoroughly cleaned. Some manufacturers of tanks pay particular attention to this problem and do the best possible job of cleaning before delivery to their customers. On the other hand, so much weld-shot has been found in pumps installed on tanks made by certain other manufacturers, that it is difficult to believe that any attention has been given to their cleaning. A clean tank is well worth a slight extra cost.

Weld-shot is composed of small balls of hard, steelweld-metal, and it is very damaging to any make of pump. The balls vary in size, some being as large as $\frac{1}{8}$ ", and some as small as a few thousandths of an inch.

Smaller pieces are often more damaging to pumps than larger pieces, as they can more easily work their way into clearance cracks between impellers and housings, where they cause the pumps to "bind" or "freeze." Sometimes when such a pump is opened it is difficult to be sure of the actual cause of the trouble, as the guilty piece of weld-shot may be so flattened or worn that it cannot be recognized.

Scored sleeve bearings are usually a sure sign of the presence of weld-shot in the fuel. Pump impellers will often show score marks or scratch marks to indicate the passage of foreign matter through them. However, the best pumps, having hardened or toughened impellers, may not show such marks, as they are greatly resistant to scoring. Pump housings are generally made of the softer metals, such as iron and bronze, and weld-shot will leave marks and wear on these parts.

Truck pumps have more trouble from weld-shot than bulk-plant pumps. In a stationary tank there is little vibration. Some weld-shot will never loosen, and even loose weld-shot can settle to the bottom and never be drawn to the tank liquid outlet and into the pump. On the other hand, in truck tanks the liquid is in a constant state of disturbance. Every time the truck stops, a wave of liquid runs from one end of the tank to the other, lifting matter from wherever it has settled, and often placing it nearer the tank liquid outlet. Driving on rough roads causes similar disturbances. You can count on it—every bit of weld-shot originally in the tank will loosen from road shocks, and all of it will

eventually run through the pump.

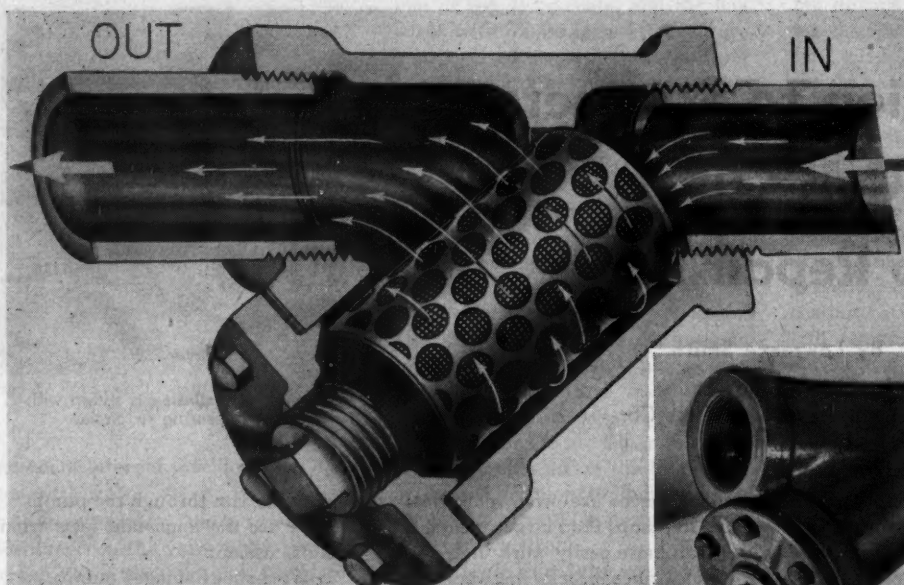
Here are the important facts from this discussion:

1. Weld-shot damages pumps.
2. Weld-shot occurs in all tanks, particularly new tanks.
3. Weld-shot particles of very small size can still cause trouble.
4. Tanks made by some manufacturers contain exceptionally large quantities of weld-shot.

From Item 1 we see we must do something to protect all pumps. From Item 2, we see we must have protection on all tanks, particularly new tanks. From Item 3, we see that the protection must be efficient enough to trap small particles. From Item 4, we see we must design our protection in such a way that large quantities of foreign matter can be handled if necessary. That all adds up to:

1. A strainer.
2. A strainer with a screen having holes so small that small particles cannot go through.
3. A strainer with a large dirt-capacity.
4. A regular servicing routine for opening the strainer for inspection and cleaning it out as necessary.

For our Smith pumps we recommend the use of a strainer having a 40-mesh or finer wire screen, or its equivalent. By "40-mesh or finer" we mean 40 or more wires per inch each way. In some of the strainers that we supply we are using screens made of wire that is specially woven into a "basket-weave" cloth. Such screens are stronger than the straight 40-mesh, and have greater flow areas, as they do not have to be reinforced with perforated sheet-metal. These screens will trap nearly all particles that can damage. Other pump manufacturers



Left: Cut-away drawing of the "Y" type strainer used in LPG service. Arrows indicate direction of flow. Liquid enters strainer through pipe at "in" and flows inside perforated metal tube which is lined with fine wire mesh screen.

Right: Strainer with bolted cap, which permits easy opening for inspection and cleaning.



may recommend different types of screen, having larger or smaller holes.

It has been our experience that larger passages in the screen allow too much foreign matter through the pumps. Some strainers sold for LPG service have screens carrying 1/16" holes as standard equipment. A screen like this is in our opinion little better than no screen at all. Ninety per cent of weld-shot found in pumps returned to our factory has been small enough to pass through a 1/16" hole, and even a very quick inspection of these pumps shows they have considerable damage. On the other hand, finer screens having holes too small clog up too easily with fine rust or scale that actually would not be too damaging to a pump if allowed to go through. Having a clogged strainer is as bad as having no strainer, as clogged strainers starve pumps for liquid, cause vapor lock and overheating, reduce fuel delivery speed and, in extreme cases, cause excessive pump wear.

A strainer having a large capacity will take a considerable amount of matter to clog it. Such a strainer will not have to be opened for inspection and cleaning as often as a small

strainer. We recommend the use of a strainer one pipe size larger than the valves and other fittings in the pump inlet line. That is, if you have a 2" inlet line, install a 2½" strainer with a 2½" x 2" bushing in each end. With a 2½" line, use a 3" strainer, etc. This larger strainer will have to be inspected less often, and its higher original cost will be paid off in labor savings.

The following is our recommendation on a servicing routine for pump strainers. Strainers must be opened for cleaning. Experience has shown that the mere blowing off of some fuel through the strainer cap often will not do the job. Since strainers must be opened, specify the type with a bolted cap. This type strainer can be opened easily, merely by removing six or eight small screws with a standard 8" adjustable crescent wrench. The other type of strainer, closed with a large threaded plug, is unfortunately much more common. These strainers are difficult to open as they require the use of a 3-foot pipe wrench, that is particularly difficult to apply under a truck.

1. Open strainer at end of first day of pump operation.
2. Open strainer at end of each

successive day, until little foreign matter is collected.

3. Open once a week until little foreign matter is collected.

4. Open once a month thereafter.

The other two common types of dirt found in pumps, tank and pipe scale and sand and gravel, are not as damaging as weld-shot. The same strainer equipment already recommended will handle this matter as well. Tank scale occurs most frequently as tanks get older, and the possibility of its presence is one reason why we recommend opening strainers once a month, regularly. Sand and gravel may get into a load of fuel in several ways, but the most common is where drivers are not careful about dropping connecting hoses on the ground. We have seen open hoses handled in such a way that cupfuls of sand and gravel were scooped into the openings at every loading.

(Those wishing further information about the interior construction of strainers and the use of blow-off stacks are invited to write to the author for printed material. This is available without charge from Smith Precision Products Co., 1135 Mission St., South Pasadena, Calif.—Ed.)



ASSOCIATION NEWS

New England

The Fifth Eastern L. P. gas Service School held recently at the University of Bridgeport, Bridgeport, Conn., drew a total enrollment of 125 men. The men came from the East-Central district of the Liquefied Petroleum Gas Association, which extends as far south as Virginia.

New Mexico

Sales problems, safety, insurance, and management guidance held the spotlight at the eighth annual convention of the New Mexico Liquefied Petroleum Gas Association, held at the Hilton Hotel, Albuquerque, September 13 to 15. Registrants numbered 154, including several LPG distributors from Texas, Colorado, Arizona, and Nebraska. A well attended trade show brought many new products to the attention of the distributors.

Talks during the convention sessions included "The Magic of Fire," by E. O. Podorski, U. S. Bureau of Mines; "You Can't Make a Profit Without a Sale," by Mel Trotter, President, LPGA; "The Cure For the High Cost of Insurance," by Earl W. Gammage, Pan American Casualty Co.; "Who is Responsible for Safety," by Carl Abell, editor, Butane-Propane News; "Champs or Chumps," by Louis Marks, sales manager, The Coleman Co.; "Business Management," by E. B. Reichstetter, Denver branch manager, Dun and Bradstreet. Jeff Williams, attorney, columnist, and radio artist, of Chickasha, Okla., entertained and inspired the convention visitors for an hour at the closing luncheon.

Entertainment features included a special luncheon and sight-seeing tour for the ladies, banquet with floor show and dancing, and numerous

general and invitational cocktail parties.

New officers elected at the business meeting of the Association were Morris Wycoff, president; John Peryatel, vice president; Vergil Henry, secretary-treasurer. J. C. Crawford was re-elected as executive vice president. The year closed with a comfortable surplus in the treasury.

After thorough discussion of the merits and demerits of the proposal, a motion to integrate the New Mexico association with the national LPGA was passed by a heavy majority.

North and South Carolina

The Frances Marion hotel, Charleston, S. C., was the locale of the recent joint convention of the North and South Carolina LPGA's September 18 and 19. Mayor William McG. Morrison was the principal speaker.

Recreational activities of the convention included tours of Charleston, a deep sea fishing trip, banquet and dance.

Pennsylvania

The Pennsylvania L. P. Gas Association had the largest turn-out in its history during the recent annual convention held in Harrisburg, according to William H. Plank, district secretary of LPGA.

Mel Trotter, national LPGA president, was a featured speaker on the varied program which included Cy Burg, vice president of the Iron Fireman Co.

Highlight of the business session was the report of the Legislative Committee headed by Ed Shaffer who introduced representatives from the Pennsylvania Department of Labor and Industry for a discussion of the new Regulatory Law which is now in effect. A representative from

the State Department of Revenue was also present to discuss the new state sales tax.

Feature of the evening banquet was the presentation of a special plaque to Harry K. Strickler, first president of the Pennsylvania association. The presentation was made by L. F. Finkler, past president, who lauded Mr. Strickler for "his unselfish giving of time and energy" toward the growth and development of the LPG industry in Pennsylvania.

New officers elected were: A. E. Bone, Malvern, president; William F. Cutten, Wyoming, first vice president; Calvin Goss, Glenshaw, second vice president; Frank Thompson, Carlisle, treasurer; and Mark O. Haines, Jr., Oxford, secretary.

Directors for the coming year are: Russell Trexler, East Greenville; L. L. Meyers, Temple; Eugene Witmer, Soudersburg; Allen F. Eby, Harrisburg; R. W. Wetjen, Hawley; L. F. Finkler, Williamsport; W. C. Bathurst, Lock Haven; J. E. Shaffer, Burnham; John W. Stoner, Rockwood; M. J. Board, Johnstown; W. J. Malchiodi, Erie; W. D. Cook, Whippany, N. J.; E. Sterling Smith, Jacobus.

California Association Expands—Changes Name

The Liquid Gas Dealers Association of California has recently changed its name to Western Liquid Gas Association and opened its membership to include producers, jobbers, agents, truckers and others associated with the handling, distribution, transportation and uses of L. P. gas.

According to George Requa, association secretary, the expansion of membership is expected to assist in the education, economic advancement, accident prevention, standardi-

zation and other related activities of those concerned with the distribution and handling of LPG, and to further the knowledge of the general public in the handling and uses of LPG.

Texas Dealers Sponsor Accident Prevention Drive

The state-wide accident prevention Program developed and sponsored by the Texas Butane Dealers Association has reached the advanced planning stage, and funds have been solicited from the industry to finance the program on a three year basis. The accident prevention program committee, under the chairmanship of W. C. (Nibs) Warren, of Lubbock, estimates that an annual fund of \$8250 will be required from the industry, in addition to the \$4000 per year which will be available from the Texas A & M College to assist in the program.

The first contribution to the fund was made by the executive committee of American Lloyds Insurance Company on August 7. This company was established and financed by L. P. gas dealers and distributors in the state of Texas, and specializes in insurance of L. P. gas operations. In addition, many individual contributions from association members followed the announcement of the financial needs for the program.

The training work involved in the program will be carried out by the Extension Division of the Texas A & M College, with the cooperation of local committees.

New Committee Members Named by LPGA

Appointment of eight new LPGA members of the National Committee for LP-Gas Promotion and reappointment of five others was approved at recent board of directors meeting of the Liquefied Petroleum Gas Association at Valley Ranch, Valley, Wyo. M. L. Trotter, Carolina Butane Gas Co., Columbia, S. C., presided at the meeting which was the first session of the directors to be held since his election to the presidency at the national convention in Chicago last May.

New appointees named for two-year terms are C. J. McAllister, The Parlett Gas Co., Waldorf, Md.; Spencer Nitchie, Butane Corp., Phoenix, Ariz.; Talmadge Lovelady, Pure Gas Service, Worland, Wyo.; F. N. Mabey, Mountain States Gas Co., Denver, Colo.; W. B. Wight, Consolidated Gas Co., Atlanta, Ga.; Charles O. Russell, Rapid-Thermogas Co., Des Moines, Iowa, and George E. Kemper, A. O.



Pennsylvania LPGA directors (seated): Frank Thompson, treasurer; A. E. Bone, president; William Cutten, first vice president; Mark O. Haines, Jr., secretary. Standing: William H. Plank, district secretary; A. C. Horner, R. W. Wetjen, J. E. Shaffer, Sterling Smith, W. C. Bathurst, M. J. Board, John Stoner, Allen F. Eby, L. H. Finkler, W. J. Malchiodi. Absent when photo was made: H. Calvin Goss, second vice president; Russell Trexler, Eugene Witmer and W. D. Cook.



Presenting plaque at Pennsylvania LPGA convention: L. H. Finkler, Harry K. Strickler, Mrs. H. K. Strickler and Mel Trotter.

Smith Corp., Houston, Texas. K. H. Dickson, Uregas Service, Moberly, Mo., was chosen to fill a one-year vacancy.

Reappointed to the committee were A. H. Cote, Suburban Propane Gas Corp., Whippany, N. J.; Walter A. Naumer, Pyrofax Gas Co., New York, N. Y.; Peter A. Anderson, Cargo-Guard Co., Portland, Maine; E. L. Mills, The Bastian-Blessing Co., Chicago, Ill., and Ralph E. Meeder, Selwyn-Landers Co., Los Angeles, Calif. Eleven other LPGA members of the group have another year to serve.

Gas Appliance Manufacturers Association and Natural Gasoline Association of America, co-sponsors of the National LP-Gas Promotional Program, have not yet announced their appointments to the committee for the ensuing year.

The board went on record as favoring the establishment of a Market Research Division within the association, provided the Finance Committee finds funds available for the purpose. This action resulted from a rec-

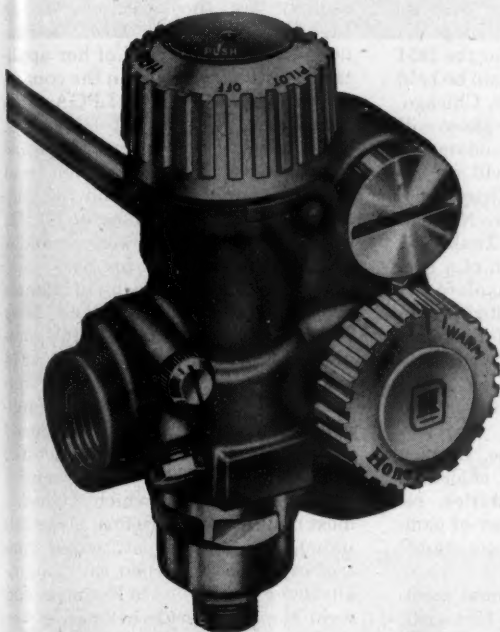
ommendation of the Market Research Committee, headed by A. F. Smith, A. O. Smith Corp., Milwaukee, Wis., that LPGA's present statistical and market research activities be fortified and expanded through employment of the necessary personnel.

Following a report of increased membership in LPGA's Eastern Canadian District, the board authorized the establishment of a district office in that area and the appointment of a district secretary. This will be the association's eighth district office.

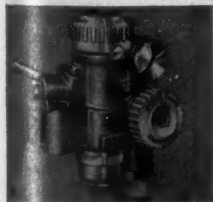
In view of the termination of the agreement between LPGA and the California Liquid Gas Dealers Association for the joint operation of an office in that state, the board authorized the establishment of a new district office and appointment of a district secretary to serve the west coast. This arrangement was made pending possible further discussions between the national and state associations concerning a renewal of the joint operation.

Announcement was made at the

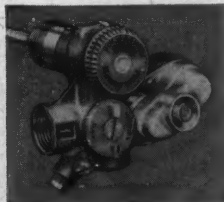
Only Honeywell
gas water heater
controls have these
important extras!



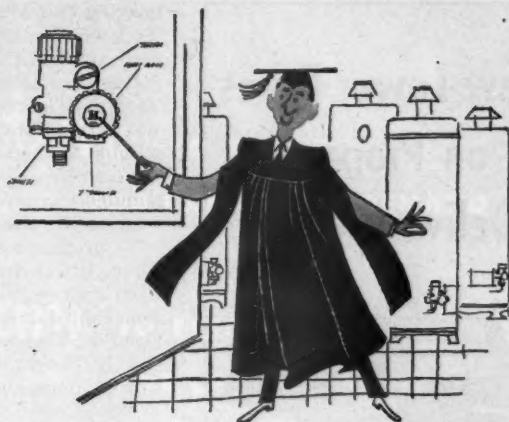
The "20"—Model V-5120 is the star performer in this big new line of Honeywell water heater controls. It provides complete 100% control for natural, manufactured or LP gas! Main gas cock with pilot position, main burner pressure adjustment and the thermomagnetic pilot with 100% shut-off are all included in this compact control.



The "21"—V-5121 is designed to take up minimum space for use as a concealed control. It includes main gas cock with pilot position; main burner pressure adjustment; thermomagnetic pilot with 100% shut-off.



The "19"—Use V-5119 for natural or manufactured gas. (Not for LP gas.) Includes thermostat; main gas cock with pilot position; pilot adjusting screw; main burner pressure adjustment; thermomagnetic pilot.



"Honeywell design" distinguishes these controls from all others! The world's leading manufacturer of precision controls—Honeywell—carefully designed these controls to maintain selected temperatures *constantly*; to light the burner *safely* and *automatically*; to provide "positive shut-off" in case of pilot failure.

Another standout feature of Honeywell Controls is the *rigid quality control test* each must pass before shipment. This assures that precision-made Honeywell Controls will give top performance when installed! Often this helps reduce the number of service calls received for minor adjustments.

You'll find Honeywell-equipped heaters have an *extra* sales feature, too! Prospects know the name Honeywell stands for quality and accuracy, and thus they're *easier to sell*!

Next time, order Honeywell-equipped water heaters! Then watch these *fast-selling, trouble-free* models boost your gas water heater profits! Call your distributor for all the facts—or mail the coupon below for literature.

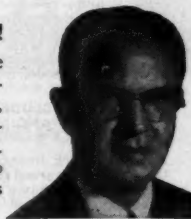
MINNEAPOLIS
Honeywell



First in Controls

Another extra! Styled by Henry Dreyfuss!

Red and white dials plus smart styling give these new Honeywell Controls *extra* sales appeal! Nationally famous industrial designer Henry Dreyfuss, working with Honeywell, helped make these controls a smart, attractive addition for any water heater. That's why Honeywell-equipped models reflect top quality at first glance—stand out from other models on your sales floor.



MINNEAPOLIS-HONEYWELL REGULATOR CO.
Appliance Controls Division
8775 Mettler Street, Dept. BN-11-103
Los Angeles 3, California

Please send me detailed information on your complete line of gas hot water heater controls.

Name.....

Address.....

City..... Zone..... State.....

New Lower Prices on Propane Delivery Units



MODEL 100



MODEL 300

**Prices Shown Below
Include Truck and Tank
Piped Complete**

Specifications: New 1953, heavy duty 2 ton Chev., 2 speed axle, 825, 10 ply rear, 750 front tires; Nor-Tex propane tank as pictured above; pump, piped complete with 2" strainer, heavy duty valves and fittings; 50 ft. filler hose; tanks painted; clearance lights, ready to use.

MODEL 100

1320 W.G.	1400 W.G.	1600 W.G.
single	twin	single
\$3,795.00	\$3,845.00	\$3,995.00
		twin
		\$4,020.00

MODEL 300

Add \$300.00 to the above prices.

We can furnish any make or model meter, pump, propane carburetion, fire extinguisher, etc. Any size single or twin barrel tank from 600 W.G. to 2,000 W.G. available, with or without truck or piping. We can save you money on any make or model truck, new or used.

**PRICES INCLUDE ALL TAXES
BUDGET FINANCING AVAILABLE
AT 5% INTEREST**

Buy your truck from a dealer who is in the gas business and KNOWS WHAT IT TAKES to equip a truck properly, and SAVE YOU MONEY.

IMMEDIATE DELIVERY



Call collect,
phones 570 or 686
Preston W. Grace

**WHITE RIVER
DISTRIBUTORS, INC.**

Batesville, Arkansas

meeting that Miss Marian Hung-Yin Tsai, who has been awarded a scholarship in the LPGA-sponsored course in gas fuel technology at Southern Technical Institute, Chamblee, Ga., will arrive from Formosa for the beginning of the fall quarter. Individual members of the board have contributed to a special fund established for this purpose.

To provide additional scholarship funds, it was decided to earmark \$1 from each registration fee at all national and district conventions for the Gas Fuel Technology Foundation.

J. H. Herrin, Coastal Butane Gas Corp., Summerville, S. C., chairman of the Convention Committee, reported that his group had held its first meeting and decided to adopt the same format used in 1953 for the 1954 conclave. The event will again be held at the Conrad Hilton Hotel, Chicago. Exhibit space in the trade show will be expanded to accommodate 217 booths, some of which will be reserved for displays of LPG trucks.

Upon recommendation by Norman A. Evans, Pressed Steel Tank Co., Milwaukee, Wis., chairman of a special committee named to explore the subject, the directors adopted a non-contributory pension plan for association employees. It became effective Oct. 1, 1953. Hospitalization insurance coverage for the staff was also voted by the board.

A report by A. E. Bone, Eastern Propane Co., Malvern, Pa., chairman of the Membership Committee, revealed that the total number of paid-up association members now stands at 1,631.

The board will hold its next meeting at Charleston, S. C., the first week in December.

STI Enrolls First Coed— Chinese Girl Engineer

Imbued with a burning desire to invade a traditionally male stronghold and become a gas fuel technician, a pretty 26-year-old Chinese girl, Marian Hung-yin Tsai, enrolled Sept. 26 at Southern Technical Institute, Chamblee, Ga., after an 8,000-mile trip by air liner from Formosa.

Miss Tsai enrolled in the 18-month course in gas fuel technology at Southern Tech, a unit of Georgia Institute of Technology. She is the only feminine member of the class.

Standing as her sponsors and providing \$2,250 for her education in this country are the directors of the Liquefied Petroleum Gas Association. The group learned of her application for a scholarship in the course, which is sponsored by LPGA, at a meeting in Atlanta last December. After months of correspondence between Miss Tsai, association and Southern Tech officials and the Chinese Embassy in Washington, D. C., international red tape was cut and a student visa obtained for her.

Born in 1927 at Tai-hsing in Kiangsu province on China's mainland, Miss Tsai was graduated from "high middle school" at the age of 18. In 1946 she entered National Yin-sze university. She first studied civil engineering and later electrical engineering. Marian averaged 97 in calculus, 94 in physics and 99 in differential equations, subjects which bedazzle most male students. Before her graduation, the Communists seized control in China and when the Nationalist government fled to Formosa, she went along and made her new home at Taipei in Taiwan province. Her

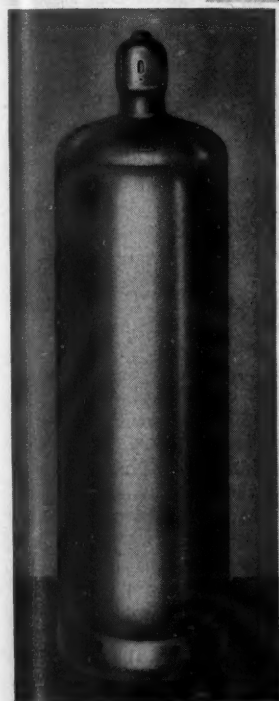


Marian Hung-yin Tsai, 26-year-old Chinese engineer, registers for gas fuel technology course at Southern Technical Institute, Chamblee, Ga., with Lawrence V. Johnson, director. Miss Tsai, the only girl in the class, is sponsored by members of the board of the Liquefied Petroleum Gas Association who contributed to her scholarship.



It's time TO ORDER RELIABLE
LP GAS CYLINDERS FOR EXPANDING DEMAND

It's time TO ESTABLISH RELIABLE
SOURCES OF SUPPLY FOR LP GAS EQUIPMENT




**Harrisburg Lite-Weight
LP Gas Cylinder with
aluminum ground coat
I.C.C. 4BA-240**

**Harrisburg Lite-Weight
LP Gas Cylinder with
red oxide ground coat**



Most far-sighted business men, in all lines of business, will agree that now is the time to establish your contacts with reliable sources of supply. Here at *Harrisburg Steel*, we welcome inquiries and orders from our valued old customers... but we also welcome business from LP gas people who have never before used our *Lite-Weight* LP gas cylinders. If you're in the market for a 100 lb. capacity, 72 lb. tare weight, LP gas cylinder of exceptional quality and safety... cylinders that are built to a standard, not to a price... write us today stating quantities in which you are interested. You'll receive a catalog and quotations by return mail.



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**HARRISBURG STEEL CORPORATION
HARRISBURG, PENNSYLVANIA**

Mail us your LP Gas Cylinder catalog and current prices on quantities of _____
Harrisburg Lite-Weight Cylinders.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

parents, who are farmers, remained on the mainland.

Since July, 1949, Marian has worked for the Taiwan Pineapple Corp. as assistant engineer in the technical division. She earned her engineering degree this summer by passing a special examination given to her by the Ministry of Education because the Chinese government does not permit undergraduates to go abroad to continue their studies.

At Southern Technical Institute, Miss Tsai will have as her classmates young men from all sections of the

United States and Canada. She will receive classroom and laboratory training in all phases of L. P. gas operations.

Two State Service Schools Sponsored by LPGA

During the month of August, the Liquefied Petroleum Gas Association of Minnesota and Wisconsin sponsored a series of educational meetings as a joint two-state project.

John E. Kelderhouse, secretary, North Central District, was respon-

sible for the arranging and planning of the schools. Ralph Faust, field engineer, Robertshaw-Fulton Controls Co., was the instructor. The schools drew an average attendance of 35, with a high attendance of 70 at Detroit Lakes, Minn.

Because of the cooperation of the states involved, it was possible to plan an itinerary of approximately 2500 miles and to conduct 19 service schools for the benefit of the industry.

AGA Launches Educational Program

A broad educational program designed to acquaint school children with the vital role played by gas in the modern economy has been initiated by the educational service bureau of the American Gas Association.

This is the broadest program of its type ever undertaken by the gas industry. Materials used in the program, from film strips to booklets, were prepared in collaboration with the National Science Teachers Association and with the professional guidance of leading educators. The entire program has been designed strictly from a teacher's viewpoint.

The first unit in the new school education program is "Natural Gas—Science Behind Your Burner." A film strip of 42 black and white frames tells a continuous story of gas in the home, local distribution, long distance transmission, gas at the source and a general summary. A teacher's guide suggests ways of using the program materials to best advantage in schools. The guide points out the many interesting and understandable scientific principles and concepts presented by natural gas as a study topic.

Completing the kit are a wall chart explaining the flow of gas from the well to the burner, a wall chart showing principal pipelines in the U. S. and descriptive sheets for the student to take home.

The National Science Teachers Association has agreed to mail out some 19,000 copies of the Teacher's Guide to its own mailing list.

Highest Scholastic Average Goes To Kentucky Graduate

Jess B. Ward, son of Mr. and Mrs. G. Mack Ward of Paintsville, Ky., has graduated with highest honors from the Southern Technical Institute in Chamblee, Ga., Southern Tech officials have announced. He graduated September 19 and will receive his Associate in Science degree at the June, 1954 commencement exercises.



If you had the facilities, the personnel, the tools to build LPG transportation and storage equipment solely for your use, you'd make the kind of equipment that Superior makes right now. You would put into your own product the same craftsmanship, the same strength, and the same important safety features that are available to you here.

Whatever your requirement... Superior makes it better!

PIONEERS
IN LP GAS
TRANSPORT
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Superior
MFG. COMPANY

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ALL INQUIRIES ANSWERED PROMPTLY

Worth Waiting For!

Torrid Breezes and Hot Water A'Plenty



The Space Heater that automatically furnishes heat from a heat exchanger. The Space Heater that heats water too! Sensational, Amazing! You're right, and only Handley-Brown provides this type service. Not claims but facts. Full American Gas Association Approval.

HANDLEY-BROWN HEATER COMPANY
2502 BROOKLYN ROAD
JACKSON, MICHIGAN

Legally Enforceable Regulations Asked By Texas Butane Dealers

The growing importance of liquefied petroleum gas as a fuel on farms and ranches was highlighted recently by a hearing before a Texas Railroad Commission examiner. In the session, believed to be the first of its kind ever held in Austin, the Texas Butane Dealers Association asked the commission to set up legally enforce-

able regulations for safe storage and sale of butane and propane. About 100 dealers were present.

The Texas Insurance Advisory Association, also represented at the hearing, petitioned the commission to delay action until a national study of safety regulations is completed. The study is being made by the National

Fire Protection Bureau, the association spokesman said. Transcripts of the hearing will go to the commission for action. Recommendations of the dealers dealt with minimum safe distance for storing liquefied petroleum gas near buildings and also with automatic controls and valves for storage tanks and hoses. The dealers also asked for some regulation of "home-made" butane tanks used by farmers and ranchers.

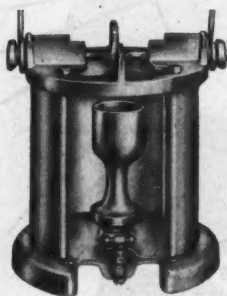
LPG Promotion Producing Good Results

Judging from the large number of requests for informational booklets received by the LP-Gas Information Service, Chicago, following the release of its ads on L. P. gas heating in August, public interest in the use of the fuel for this purpose is high, Lee A. Brand, Belleville, Ill., Chairman of the National Committee for LP-Gas Promotion, told that group at its Aug. 13 meeting in St. Louis.

"Our heating insertions are concentrated in the August, September and October issues of national, regional and state magazines on our media list in order to give us blanket coverage during the big selling season," he said. "Our tenth-round merchandising kit of tie-in promotional materials has been in the hands of dealers for several weeks. The Beals Advertising Co. reports that orders received thus far for the various folders, envelope stuffers and newspaper ad mats offered indicate that the industry will make an all-out drive for heating load this summer and fall. A handsome broadside reproducing the principal ads and giving the publication names and dates and other late information about the promotional program went out to more than 12,000 companies in all industry branches."

Mr. Brand, who is vice president of Empire Stove Co., pointed out that the 11th round of ads, scheduled for release this winter, will "swing back to a hard-hitting campaign on L. P. gas ranges with the new automatic icemaker gas refrigerator receiving secondary emphasis in non-farm magazines and L. P. gas tractors in national farm publications."

Stating that the publicity staff of the LP-Gas Information Service is "doing a bigger and better missionary job for our industry each month," the Chairman reported that since May it had placed articles on L. P. gas in "Progressive Farmer," "Arkansas Farmer," "New England Homestead," "McCall's," "Baking Industry," "Pennsylvania Farmer," "Wall Street Journal," "Tide Magazine" and "Farm & Ranch & Southern Agricul-



Here's Year-Round Sales Booster ...

RANSOME P-2S UTILITY FURNACE

Sells To

Telephone companies
Utilities
Plumbers
Roofing contractors
Machine shops
Industrial plants
Painters
Paper hangers

Used For

Melting paraffine for wire wrapping
Heating asphalt for patching jobs
Melting lead
Melting babbitt
Melting glue
Heating water
Space heating

YOU PROFIT 3 WAYS — There's a good margin on initial sales; then users buy LP-Gas the year-round, usually in small containers that gross $\frac{1}{3}$ to $\frac{1}{2}$ more than bulk gas. RANSOME P-2S furnace users quickly become prospects for other industrial equipment using LP-Gas; also for home uses.

POWERFUL SELLING POINTS — Like all RANSOME torches and furnaces, the P-2S burns clean, safe, quick-starting LP-Gas—no pouring, pumping or priming; no spitting or flashing flame; no fumes or soot. Operates 6 hrs. on 1 gal. at 2# pressure. Burner is non-clogging. Maintains steady flame even in high winds; heats and melts quickly. Available with space-heating hood or top shield.

Makers of
Torches
Burners
Furnaces
for LP-Gas
Since 1932

Why not stock the year-round, volume-building RANSOME line NOW. It's a wonderful sales fill-in. Write TODAY for price lists, discounts and catalog.

RANSOME COMPANY

Designing & Constructing Engineers

19

ROOM A11, 4030 HOLLISS ST.

EMERYVILLE, CALIFORNIA

Ransome

Gas FIRED Peerless HEATING EQUIPMENT

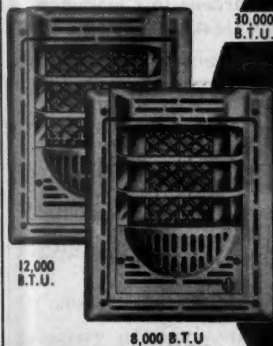
THE COMPLETE LINE FOR ALL *Gas* NEEDS

Forced Air and Gravity Circulators, Radiant Heaters, Panel Heaters and Fan Type Unit Heaters. 68 Years of progressive advancement has developed this complete, tried and proved line—styles, types and sizes for domestic, commercial or defense heating requirements.

A.G.A.

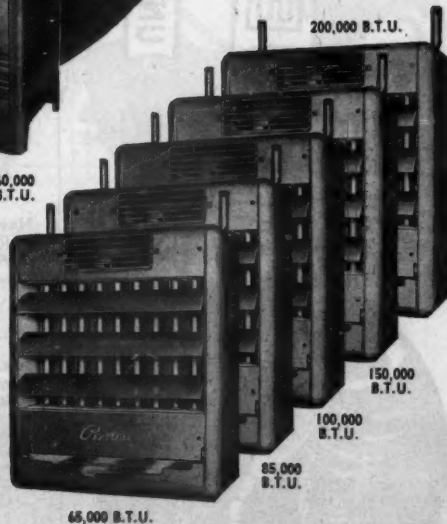
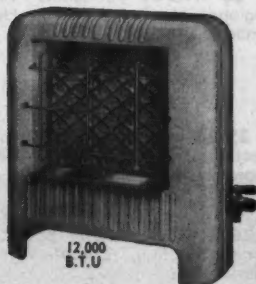
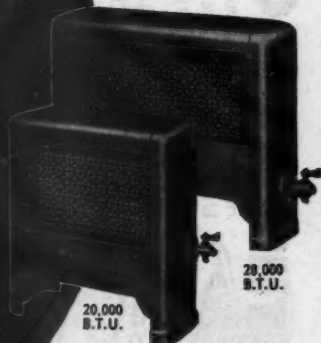


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Stylewise, Qualitywise and Pricewise
The PEERLESS Line Is Best for Every
Heating Requirement—For Small
Homes, Apartments, Housing Projects,
Defense Housing, Churches, Schools,
Motor Courts, Stores, Offices, Shops.

Write for literature and prices today.



PEERLESS MANUFACTURING CORP., — LOUISVILLE 10, KENTUCKY

THE SIGN OF TRUE ALLEGIANCE

Ability to initiate and follow through with true allegiance is marked by the Universal sign. There's a deep sense of responsibility to customers we serve by producing and marketing of "everything done in oils." Your source in our universe is UNIVERSAL.

REFINED PRODUCTS • NATURAL GASOLINE • BUTANE and PROPANE
SPECIAL NAPHTHAS • LUBE OILS and SOLVENTS

CARGO, TANK CAR OR TRUCK LOADS • WATER TERMINAL AT CHICAGO

UNIVERSAL PETROLEUM COMPANY

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turist," and that its mat releases had appeared in thousands of weekly newspapers all across the nation.

Pierre Vinet, Geo. D. Roper Corp., Rockford, Ill., reporting for the Training Subcommittee in the absence of Chairman Lee E. Clancy, The Murray Corp., Detroit, Mich., said a total of 1,595 complete sales training courses had been sold to industry companies or given on a complimentary basis to members of the National LP-Gas Promotional Program as of July 31, while 3,139 individual booklets had been sold. One of the most significant purchases, he added, was of 200 copies of the booklet, "How to Sell LP-Gas House Heating," by the Pennsylvania L. P. gas Association for use at a series of regional "heating workshops."

Missouri LPGA Goes To Fair

The Missouri LPGA went to the

state fair at Sedalia recently and registered 20,000 of the estimated 600,000 fair attendance at their exhibit.

Displaying appliances and equipment of major industry manufacturers the association had excellent opportunity to present its story of L. P. gas and its uses to the public. Literature on LPG as well as a list of Missouri member-dealers was distributed, and novelties supplied by various firms, with a Tappan gas range grand prize, were features of the show.

The exhibit was held with the cooperation of the national LPGA Promotional Committee.

North Dakota

The annual fall meeting of the North Dakota LPGA is scheduled for Nov. 9, according to Grover C. Beutin, Jr., program chairman. The one-day meeting will be held at the Rainbow Gardens in Carrington.



CALENDAR

All associations are invited to send in dates of their forthcoming meetings for this calendar.

NOVEMBER

- Nov. 2—Minnesota Petroleum Gas Association. Fall Meeting. Nicollot Hotel, Minneapolis.
- Nov. 8-10—Ohio LPGA. Fall Meeting. Gibson Hotel, Cincinnati.
- Nov. 9—Mississippi LPGA. Annual Fall meeting. Robert E. Lee Hotel, Jackson.
- Nov. 9-12—American Petroleum Institute. Annual meeting. Conrad Hilton Hotel and Palmer House, Chicago.
- Nov. 20—NGAA Panhandle - Plains Regional Meeting. Herring Hotel, Amarillo, Tex.

1954

JANUARY

- Jan. 25-26—Michigan LPGA winter meeting, Pantlind Hotel, Grand Rapids.

FEBRUARY

- Feb. 26—NGAA Permian Basin Regional Meeting, Lincoln Hotel, Odessa, Tex.

MARCH

- Mar. 22-24—LPGA Southeastern District. Annual convention, Atlanta-Biltmore Hotel, Atlanta, Ga.

APRIL

- April 5-7—Nebraska Liquefied Petroleum Gas Dealers Association. Annual convention and trade show. Fontenelle Hotel, Omaha.
- April 21-23—NGAA 33rd Annual Convention, Baker Hotel, Dallas, Tex.
- April 23-24—Western Liquid Gas Association of California. Annual Meeting, Palace Hotel, San Francisco.
- April 25-27—Mississippi LPGA. Annual Convention. Edgewater Gulf Hotel, Edgewater Park.

MAY

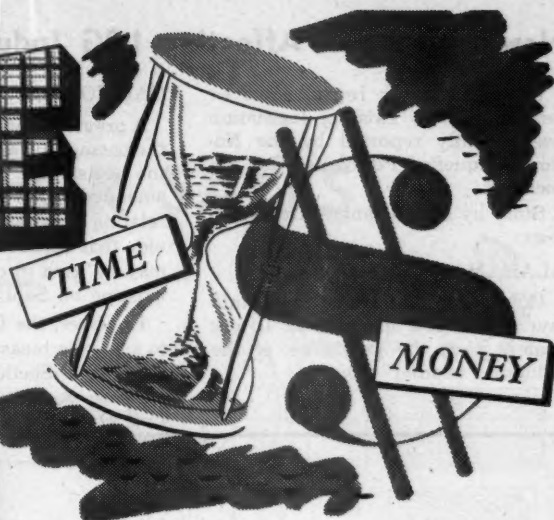
- May 9-12—LPGA annual convention and trade show. Conrad Hilton hotel, Chicago.
- May 19-21—Gas Appliance Manufacturers Association. Annual meeting. Drake Hotel, Chicago.

JUNE

- June 28-29—Wyoming LPGA. Annual Convention. Townsend Hotel, Casper.



SAVE



Yes, you'll save **TIME** and **MONEY**
with

AMERIVENT

double-wall GAS FLUE PIPE

AMERIVENT'S INSTALLED COST IS THE LOWEST THERE IS!

Here's why. Only **AMERIVENT** double-wall aluminum flue pipe gives you the amazing **SNAP-LOCK** joint. No more tedious cement, mastic, tools or screws!

Simply press **AMERIVENT's** mating ends together and **SNAP!** — a permanent, gas-tight joint is formed. Vents install up to three times faster — **AND THAT MEANS BIG SAVINGS OF TIME AND MONEY!**

Of course, **AMERIVENT** also offers the proven superiority of double-wall **INSULATED** construction. Stops "hot walls," condensation-damage, vent failures, pipe breakage. Venting problems go up the chimney — with **AMERIVENT!**

*Cost-conscious heating contractors
used AMERIVENT on these large tracts:*

Lomita Village Project 2800 units
(San Diego, Calif.)

West Dallas Project . . . 1400 units
(Dallas, Texas)

Landsdale Gardens Tract 1500 units
(Norfolk, Va.)

Oaklawn Housing Proj. 1034 units
(Wichita, Kansas)

Topeka Housing Project . . . 462 units
(Topeka, Kansas)

Cabrillo Heights 1000 units
(San Diego, Calif.)

Memphis PHA Project . . 1000 units
(Memphis Tenn.)

Schuerman Realty Tract . . 600 units
(St. Louis, Mo.)

Memphis Housing Project 464 units
(Memphis, Tenn.)

Anniston Housing Project 370 units
(Anniston, Ala.)

Monterey Naval Project . . 600 units
(Monterey, Calif.)

Patrick A. F. Base Project 497 units
(Cocoa, Fla.)

AND MANY OTHERS!

IT'S A

SNAP

TO INSTALL!



AMERIVENT'S

famous
SNAP-LOCK JOINT



Used on Model Homes, Little Homes, Big Homes, **TRADE SECRETS HOMES**, tracts and apartments everywhere. Your local plumbing and heating supplier has it!



american metal products co. inc.

2911 Compton Avenue • Los Angeles 14, California

New Legislation Affecting LPG Industry

Passage of new legislation or amendments to existing legislation was recently reported by the National Liquefied Petroleum Gas Association.

State by state changes are as follows:

ALABAMA:

House Bill No. 216, enacted into law as Act 208, exempts L. P. gas dealers from the provisions of the "itinerant peddler" tax.

CALIFORNIA:

A previous announcement reported the passage of Senate Bill No. 1702 by the Legislature. This bill would have amended the Health and Safety Code relating to gas appliance vents to provide that approved unvented heaters may be used in completed buildings existing on Sept. 30, 1953.

However, the Governor has failed to sign this measure and this pocket veto leaves Section 16900 of the Cali-

fornia Health and Safety Code in its prior status. This section would require the venting of all gas heating appliances when installed in buildings coming under the jurisdiction of the Code, and it was considered to be retroactive by the California Attorney General. Senate Bill No. 1702, if it had been signed by the Governor, would have eliminated this retroactivity.

DELAWARE:

The Delaware Legislature has been adjourned. Senate Bill No. 293 creating the Office of State Fire Marshal was enacted into law during the session.

ILLINOIS:

House Bill No. 443, substantially the LPGA Model Container Law, has been vetoed by the Governor. The Governor's veto message states that in his opinion this bill violates provisions of the Illinois Constitution as class legislation.

MICHIGAN:

House Bill No. 467 changing the present method of handling motor fuel taxation of liquefied petroleum gas was enacted into law.

PENNSYLVANIA:

House Bill No. 1629 amending the L. P. gas safety regulatory law was enacted. This amendment requires the registration of bulk plants and dealers in liquefied petroleum gas and industrial and utility users of liquefied petroleum gas. The scale of registration fees is set forth in the law.

During the session, the Pennsylvania Legislature also enacted sales and use tax measures which became effective on September 1.

WISCONSIN:

Assembly Bill No. 30, revising the motor fuel use tax handling of liquefied petroleum gas, has been enacted into law as Chapter 510, effective September 1. This law is substantially the model special fuel use tax law of the North American Gasoline Tax Conference and imposes the tax when L. P. gas is placed in the fuel supply tank of a motor vehicle. Dealers making motor fuel use sales are required to be licensed and bonded.

State Regulations

NEVADA:

Nevada has issued L. P. gas regulations. These regulations are substantially NFPA No. 58 with two major exceptions in that the table of tank distances varies slightly and a higher setting on relief valves is allowed.



YOU WROTE THE TICKET

for this
time-saving
LP-Gas Meter!



... and that's why more Red Seal LP-Gas "Compact" meters are now in use on tank trucks than any other brand ... helping LP-gas dealers make fast, accurate deliveries ... with big, easy-to-read numerals keeping tabs on the gallons delivered.

The Red Seal is an approved truck metering system complete in one package. No extra accessories to buy. Famous for simplicity, sustained accuracy and low maintenance. Designed specifically for LP-gas pressures. Available with direct-reading or Print-O-Meter registers. Ask for Bulletin 779-LP.

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Styled FOR SALES... Priced TO SELL!

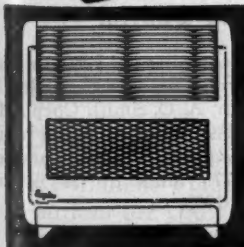
SILENT AS A KITTEN WITH AN EXTRA SET OF FOOT PADS



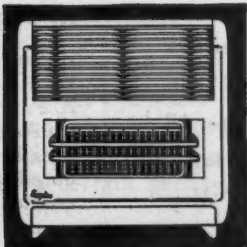
EMPIRE

COOL CABINET *Gas* HEATERS
CONSOLE TYPE *Gas* HEATERS
STANDARD TYPE *Gas* HEATERS

Take a tip from the retailers who have profit proof! Empire, the quality line, outsells all others 2 to 1. The Empire name is a powerful sales attraction. Customers know it's a brand of proven dependability, featuring modern design, skilled workmanship, and styles to suit every heating requirement for all types of homes.



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STANDARD TYPE

Sell EMPIRE
AND Pocket MORE Profit
"Thriftmatic"
Gas
BURNER



EMPIRE

STOVE COMPANY

BELLEVILLE, ILLINOIS

WORLD'S LARGEST MANUFACTURER OF *Gas* FLOOR FURNACES

Empire a great name in Gas Appliances

Gas Water Heater Shipments Climb

For the past 15 months shipments of automatic gas water heaters have exceeded those of the corresponding month in the previous year, according to the Gas Appliance Manufacturers Association.

August shipments amounted to 163,500 units to increase the total for the first eight months of 1953 to 1,471,200, a 21.8 percent rise over the same period of last year, according to Edward R. Martin, GAMA's

director of marketing and statistics.

The August estimate compares with 161,500 units shipped during the same month of 1952 which increased last year's total to 1,208,200.

Martin attributed the continuing increase in shipments of automatic gas water heaters to "the nation-wide need for home modernization and expansion caused by the tremendous postwar growth in population and the increase in the size of the average family. Many home owners are adding a new room or expanding attics," he said, "to take care of increasing

family needs. At the same time they are adding bathing and laundry facilities which require water heaters of greater capacity and faster heating."

Martin's estimates are based on a telegraphic survey conducted among members of GAMA's gas water heating division and expanded to represent the entire industry.

Green's Fuel Sales Clinic Draws 65 Representatives

Sixty-five sales representatives from various Green's Fuel, Inc. distributors attended a sales clinic which was recently held in Florida. Representatives heard a talk by Dr. Frank Goodwin, professor of marketing, University of Florida, who pointed out the difference between a "star" salesman and a "good average" salesman.

Dr. Frank Adams, director of the business education, extension division, University of Florida, showed the group a film on "Selling America." He also led a general group discussion after exhibiting the film.

The meeting and luncheon was held at the Lakeland Yacht & Country Club, Lakeland, Fla.

Southern Tech Scholarship Awarded to Pueblo Boy

The LPGA scholarship at Southern Technical Institute, Chamblee, Ga., assigned to Colorado has been awarded to Charles A. Luke of Pueblo. Charles will start the 18-month course in gas fuel technology this month.

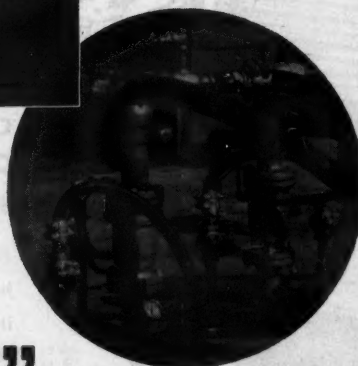
57,775 Tanks Produced In Second Quarter

Figures compiled by LPGA's Market Research Committee, headed by A. F. Smith, A. O. Smith Corp., Milwaukee, Wis., reveal that the industry's L. P. gas tank fabricators produced 57,775 units in the second quarter of 1953.

They were divided as follows:

Size in Gals.	Units
0-99	3,332
100-199	9,472
200-299	9,859
300-399	618
400-599	16,577
600-899	202
900-1,099	5,497
1,100-3,000	1,389
Over 3,000	10,911
All others	218
Total	57,775

*Built to Make Your
Hose Connections
Extra Safe!*



"G J-BOSS" STYLE X-34 GROUND JOINT FEMALE COUPLINGS

You can always be sure of the *safety* of any L-P Gas hose connections when these strong, durable, high-pressure couplings are used. Furnished with powerful-grip "Boss" Offset and Interlocking Clamps. All parts steel or malleable iron, completely rustproofed. Sizes $\frac{1}{4}$ " to 6". Also available in washer type, and with companion "Boss" Male Couplings.

Stocked by Manufacturers and Distributors of Industrial Rubber Products.

DIXON

Valve & Coupling Co.

GENERAL OFFICES & FACTORY—PHILADELPHIA 22, PA. BRANCHES—CHICAGO
BIRMINGHAM • LOS ANGELES • HOUSTON • DIXON VALVE & COUPLING CO., LTD., TORONTO

ASSOCIATE COMPANIES—BUCK IRON COMPANY INC. QUARRYVILLE PA. • PRECISION DRAWN STEEL COMPANY CAMDEN, N.J.

Get with this

WINNING COMBINATION!

* Dorothy Kilgallen teamed with Detroit Jewel... yes, a favorite TV star boosting your sales of America's finest gas ranges.

Watch your sales soar as Dorothy Kilgallen spreads the exciting news of Detroit Jewel and the new, wonderful "Old Range Retirement Plan." This famous news reporter and star of radio and television will be carrying Detroit Jewel messages to millions of prospective buyers everywhere on radio, television and in the newspapers! People across the nation sit up and take notice when this popular star sings the praises of Detroit Jewel.



Dorothy Kilgallen SAYS:

"No other range can match Detroit Jewel when it comes to beauty, performance and economy! Its sensational features such as the Top-Vue oven window, Signa-Dials and Handee-Hi broiler make Detroit Jewel the stand-out wherever quality ranges are sold! Come on... get behind the 'Old Range Retirement Plan.' It's a certain profit-builder for you!"



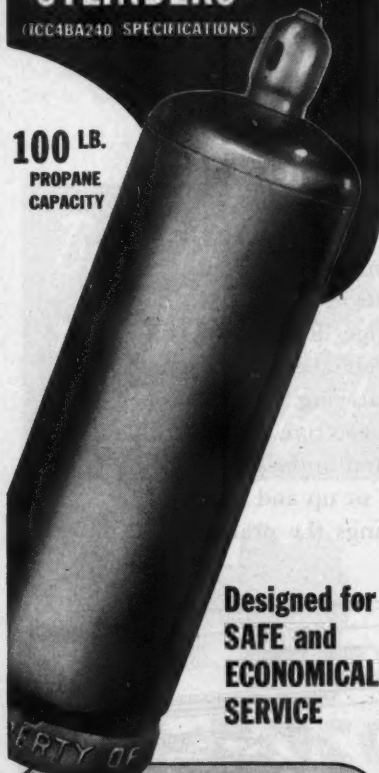
DETROIT JEWEL

DETROIT-MICHIGAN STOVE CO. • DETROIT 31, MICHIGAN

Lee PROPANE & BUTANE CYLINDERS

(ICC4BA240 SPECIFICATIONS)

100 LB.
PROPANE
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**Designed for
SAFE and
ECONOMICAL
SERVICE**

20 LB.
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**STEEL COOPERAGE
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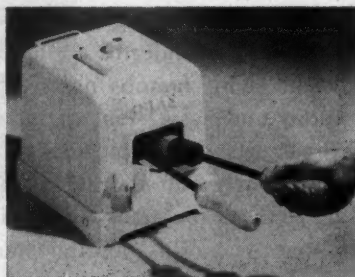
THE SERRICK CORPORATION
4801 Bellevue
Detroit 7, Michigan

Products and Trade Publications

To secure further information on products or new publications, fill out the coupon and mail, indicating by number the items desired.

1. Soldering Furnace

A new gas-fired soldering furnace, using a radiant burner as a heat source, is capable of heating, in less



than eight minutes, two 4-lb. irons from room temperature to 900° F., or one 4-lb. iron to 1200° F., with a heat input of only 9100 Btu per hour.

Other features of the furnaces, designed and built by Selas Corp. of America, are simplified maintenance, longer life of soldering coppers, and provisions made for operators' comfort.

Burner is located so that mechanical shock and flux corrosion damages are held to a minimum. Refractory hearth is easily removed and cleaned.

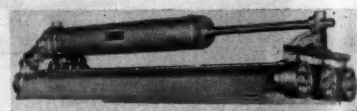
The die-pressed furnace lining is quickly installed should replacement ever be needed.

Heating is accomplished without flame impingement, yet the soldering copper is surrounded by fully burned gases which virtually eliminate oxidation and burning of the copper, enabling it to retain a bright, tinned working surface over a greatly lengthened effective life.

Selas Corp. of America

2. Lighting Fixture

A new type explosion-proof and dust tight fluorescent lighting fixture,



for use wherever the presence of explosive gases or vapors or combustible dusts requires safe, practical lighting, was introduced recently by Crouse-Hinds Co., Syracuse, New York, manufacturers of explosion-proof lighting equipment. The fixture may be spaced end-to-end with other



READERS' SERVICE COUPON

Just fill in this coupon for Products information and copies of new publications, and mail to

BUTANE-PROPANE NEWS, 198 S. Alvarado St., Los Angeles 57, Calif.

11/53 Fill in numbers of items in which you are interested.

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No. No. No. No.

NAME AND TITLE.....

FIRM'S NAME.....

ADDRESS.....

CITY.....ZONE.....STATE.....

Dearborn® AREA HEAT

*means multiple sales and
multiplied profits!*

We don't have to tell *you* about Dearborn gas heaters—you know they're the fastest selling line on the market—leading the heater field in sales year after year.

But we *do* want to tell you about the **MULTIPLE SALES** you'll get when you push Dearborn Area Heat! It's to *your* advantage, in actual dollars in your cash register, to know the full story on Area Heat—to tell your *customers* the full story.

Because every customer you sell on Area Heat is a **MULTIPLE SALES** customer. You'll sell him from 3 to 6 heaters or more, instead of a single unit. You'll sell him a Dearborn Automatic Control with every heater.

All of which adds up to the greatest sales year in your history—an opportunity to double and triple the profits you ordinarily make, because multiple sales multiply profits!

Dearborn Area Heat is putting the heat on sales, building a fire under profits. Write, wire or call now for more information if you need it—don't miss the biggest sales opportunity ever!



We're putting the heat on Dearborn Area Heat—building a fire under profits for you—with a strong national advertising campaign in the nation's top magazines!

REGIONAL SALES OFFICES:

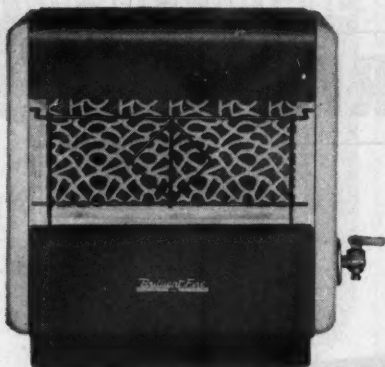
- Merchandise Mart, Dallas, Texas
- 5830 North Pulaski Road, Chicago, Ill.
- 1473 Spring St., N.W., Atlanta, Ga.
- 601 Merchandise Mart, Kansas City, Mo.
- 3625 South Grand Avenue, Los Angeles, Calif.
- Merchandise Mart, San Francisco, Calif.
- 342 W. 12th St., Erie, Pa.

Dearborn STOVE CO.

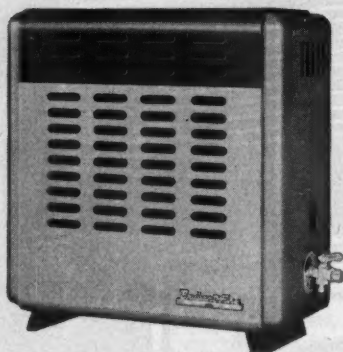
1700 WEST COMMERCE ST. • DALLAS, TEXAS

Brilliant Fine CIRCULATORS FOR ALL GASES

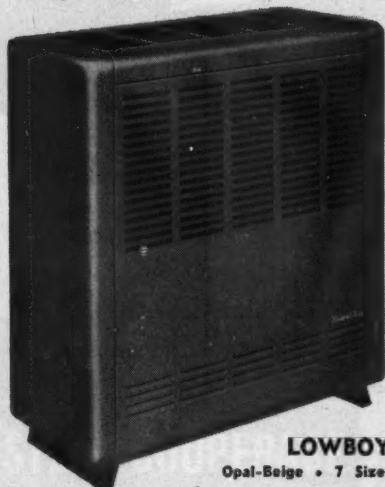
COLOR HARMONY decorator models



LITTLE GIANT
Dove Gray & Coral • 3 Sizes



HI-CAPACITY
Ivory & Brown



LOWBOY
Opal-Beige • 7 Sizes

WRITE FOR CATALOG 53
See Complete Line. Get Dealer Plan.

**THE OHIO FOUNDRY
& MANUFACTURING CO.**
"Quality Heating Equipment Since 1846"
STEBENVILLE, OHIO

fixtures of its same type, making possible continuous and uniform illumination along work areas.

Each fluorescent tube is housed in an individual tube of heat-resisting glass. The tube ends are reversed, tapered and sealed into cast aluminum housings which also contain the lamp receptacles. The receptacle housing at the ballast ends are pivotally connected to the ballast housing. At the relamping ends, the receptacle housings are fastened to a supporting stem assembly which is attached to the ceiling or a structural building member.

Fixture's reflectors are accurately formed sheet metal of interior white enamel and exterior aluminum finishes. Securely attached by spring clips, they easily may be inserted or removed after the fixture has been hung. End-to-end placement of the fixture on close centers to other fixtures of its same type (EVF) is no handicap. A link member that is part of the supporting stem assembly allows the relamping end of the fixture to be lowered several inches for easy access without interference by adjacent fixture. Tools are unnecessary to release lamp receptacle and mounting plate assembly, which is locked into the housing by a bayonet joint. A slight twist of the wrist locks or unlocks it.

Type EVF fluorescent lighting fixture is regularly available for straight pendant mounting, but special fittings for 45-degrees mounting are also obtainable.

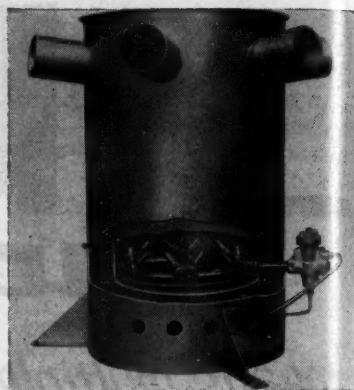
Crouse-Hinds Co.

3. Salamander

"Heat Kit," salamander using L. P. gas for fuel, is now being introduced by Arthur H. Kitson, Inc.

The "Heat Kit," claimed to be most versatile and carefully engineered, assures dependable maintenance of high Btu output plus elimination of dirt, fumes and fire menace. The unit is durably constructed of 18-gauge steel with a double-wall heat exchanger. Measuring 21-in. x 21-in. x 24-in. and weighing less than 30 pounds, it is easily portable. This unit is also said to have the important distinction of being the only salamander with directional heat flow. Six open-end 3-in. pipes welded to the upper heat exchanger may be used for extending pipes to adjacent rooms or in six different directions.

This directional heat flow feature makes "Heat Kit" ideal for use on construction jobs where plaster, concrete or cement work requires heat for drying and protection against



freezing. It also enables construction crews to work comfortably and efficiently during cold weather.

Another prominent feature of the "Heat Kit" is its high safety factor. It is equipped with the Honeywell C585 Pilotstat, A.G.A. approved for uses where 100% shut off and safe lighting are mandatory. Maximum efficiency is obtained by the use of a 50,000 Btu Barber gas burner. The unit has a fixed air adjustment and there is no ventura to adjust or become clogged. The enclosed flame is said to remain stable at all times.

The unit is rated at 50,000 Btu at 6½-oz. pressure. It requires no preheating and is extremely simple to operate and service. There are no unburned gases, no odor, no ashes. The "Heat Kit" is completely factory-assembled and ready for hookup to L. P. gas fuel supply.

Arthur H. Kitson, Inc.

4. Propane Torch

A new Bantam model of the famous Bernz-O-Matic propane torch has been placed on the market by the Otto Bernz Co., Inc., of Rochester, N. Y., manufacturers of torches and other plumbers' equipment for more than 75 years.

The Bernz-O-Matic Bantam torch is designed especially to meet the re-



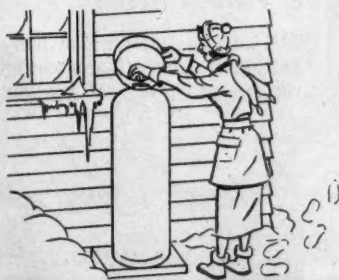
BUTANE-PROPANE News

Eight Exceptional Performance Features

OFFERED WITH EVERY

Pacific LP-GAS VALVE

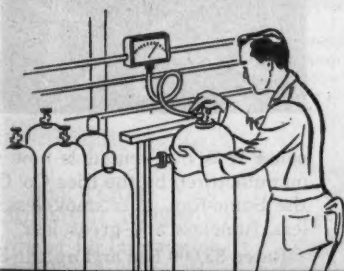
Over 20 years of engineering experience have developed the most wanted features in LP-Gas valve performance and service. PACIFIC LP-Gas valves have been engineered to build good will with customers, service men and cylinder men. PACIFIC LP-Gas valves are designed to give rugged, trouble-free performance and to save time and labor costs in servicing and replacement. Get complete information now. Write for Bulletin No. BN-100.



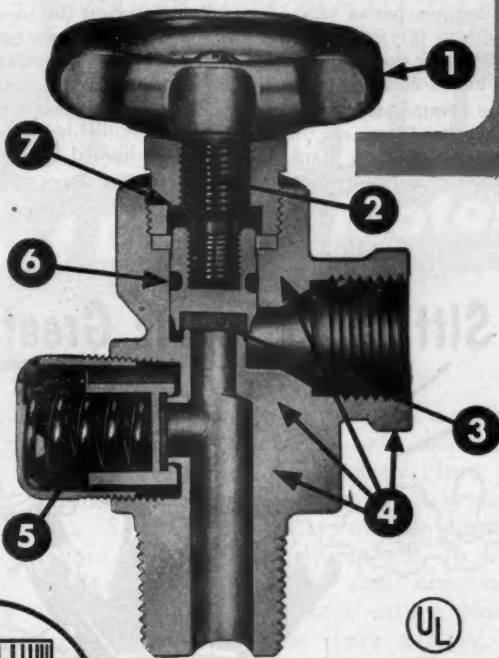
Your Customers will like it...



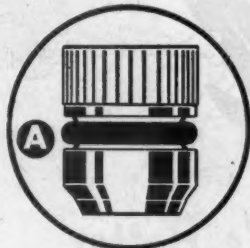
Your Service Man will like it...



Your Cylinder Man will like it...



and I.C.C. Approved



A. Replacement of a single inexpensive poppet renews both seat and seal. No special tools necessary.

1. Big Husky Hand Wheel.

More leverage with a sure comfortable grip. Long trouble-free service life.

2. Double Threaded Stem

allows valve to be fully opened in $1\frac{1}{4}$ turns instead of $2\frac{1}{2}$ to 3 turns for the conventional valve.

3. Maximum Filling Rate

provided by inlet in line with seat and large seat opening.

4. Heavy Base Under P.O.L. Seat

prevents seat distortion when tightening against pigtail. Has plenty of metal for refinishing seat giving added valve life.

5. Safety Seal.

"Pinned" tamper proof safety seal prevents seal from being broken due to rough handling.

6. Floating O Ring

seal eliminates broken seals caused in conventional valves as seat inserts become grooved—thus eliminates stem or bonnet leakers.

7. Bonnet Nut

tightens against a metal washer—eliminates danger of over tightening and cutting through diaphragm.

Pacific

INTERNATIONAL PRODUCTS, INC.

128 East Las Tunas Drive, San Gabriel, California
Telephone Cumberlond 3-4739

quirements of home craftsmen, hobbyists, and others who need a small, handy torch for fine work, or who use a torch only occasionally. The burner gives a clean, pencil-point flame that develops a temperature of 2300° F.—700 degrees hotter than a gasoline blowtorch. It is instant-lighting at any temperature down to 30° below zero, and burns steadily in any position.

The Bantam torch is 7" in length, and weighs 19 ounces, full. The fuel cylinder is 2¾" in diameter, and is disposable. A full cylinder burns ap-

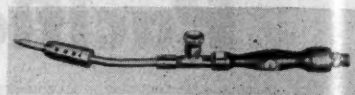
proximately 15 hours. When empty the fuel cylinder is simply unscrewed from the burner head, without tools, and replaced with a new cylinder.

The burner head can be removed from the fuel cylinder at any time when the torch is not in actual use, for convenience in storage or carrying. A self-sealing valve prevents leakage of the propane fuel. The torch and fuel cylinder are absolutely non-spillable, so can not create a fire hazard.

Otto Bernz Co.

5. Soldering Iron

Utilizing LPG (propane) for heating, the new Mutual soldering iron employs the same basic combustion features designed into all its torch equipment. The flame is concentrated



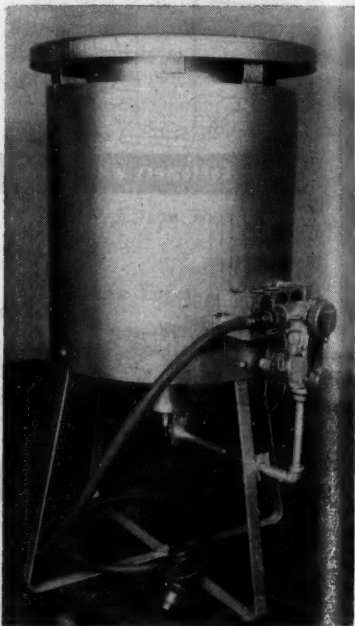
in the extreme tip of the soldering iron, which makes the tool ideal for pin point soldering where only a drop of solder is required.

This soldering iron is particularly adaptable to high production work in electronics, television, radio, aircraft, etc. The tip, which is removable, is made of a special alloy which won't oxidize. The handle remains cool at all times.

Mutual Liquid Gas Equipment Co.

6. Portable Heater

A portable heater that has an unlimited number of applications and can be set up for use anywhere be-



cause it is non-vented is now being manufactured by the Bica Co. Called the Sonic-Ray, it is smokeless, sootless, fumeless and greaseless.

Rated 85,000 Btu and up, the Sonic-Ray heaters are designed to provide forced hot air outward and downward. In addition, the exclusive pre-heat inner chamber stores heat for

Sitting on Top is Great Stuff!



But, Sometimes It's Better To Go Underground!



G. H. "Smoky" Billue

Utilizing Mother Nature's natural structure for storage of LPG is right down my alley ... 'cause ole "Smoky" Billue is the guy who developed the underground method for SAFE storage, and it's a lot cheaper too. You'll appreciate the advantages that we can give you and put money in your pocket to boot.

Write for list of
successful installations



**SECURITY UNDERGROUND
STORAGE COMPANY**

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WICHITA FALLS, TEXAS

TOP PERFORMANCE...
Proved on some of the LPG
Industry's Best Tank Trucks

HANNAY HOSE REEL

with Explosion-Proof Electric Motor



Actual service on the tank trucks of many of the nation's leading LPG distributors has proved that the Hannay Hose Reel functions . . . Economically . . . Smoothly . . . SAFELY! It reduces hazards, lengthens hose life tremendously, speeds up deliveries, eliminates mess and annoyance. The Hannay Hose Reel with Explosion-Proof Electric Motor does a REAL job in all seasons . . . in all kinds of weather!

CHECK THESE FEATURES

- Developed in collaboration with major LPG producers and leading tank manufacturers.
- Has especially designed explosion-proof, heavy duty motor, Underwriters approved.
- Can be connected through conduit for sealed, safe installation.
- Explosion-proof push button control.
- No gears, no clutch.
- Ball bearing CHIKSAN swing joint . . . does not carry weight of reel.
- Rolled edges on disc. No scuffing, no damage to hose.
- Backed by the Hannay 20-year reputation of satisfaction to YOU, the user!



The above photos show the new, custom-built tank truck of ACME Butane & Appliances, Fresno, California. No effort has been spared to provide the most modern, efficient equipment for LPG delivery including a Hannay Hose Reel with Explosion-Proof Electric Motor. Acme says, "We are well pleased with the performance of the Hannay Hose Reel".

**ASK YOUR
EQUIPMENT JOBBER**
 or write us for information.

© 1953, C. B. H. & S., Inc.

Look for this...



First Name in HOSE REELS... HANNAY

radiation. Weighing only 31 lbs. they are completely dependable and safe for residential and commercial temporary heat, with some of the models adaptable to permanent installations for campers, army barracks, field offices, etc.

Made of heavy gauge steel, designed for rough usage, the Sonic-Ray heater is finished with heat-resisting aluminum paint. Because of design refueling is easy and safe, and there is no immediate fire hazard in case of accidental upset.

The Bica Co.

7. Space Heater

Latest in the line of Humphrey automatic gas unit heaters, the Series 40-G, has been introduced by General Gas Light Co. It is designed for offices, shops, garages, filling stations, etc., that demand a small-size heater of moderate capacity.

Simple to install, the 40-G requires only a gas line, electric connection and vent, and the ceiling installation frees the entire floor space. Of modern design, finished in Fawn infrared baked, hammer-tone enamel, the



unit harmonizes with the most beautifully styled interior.

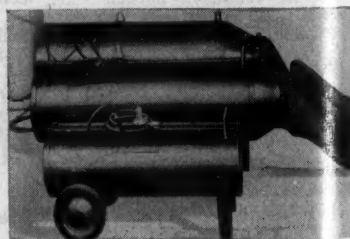
The Humphrey 40-G, rated at 40,000 Btu per hour, has the exclusive Humphrey Front that directs the heat downward without restricting the air flow. Other features include: stainless steel dustproof pilot, universal type cast iron burner, new six-flue heat exchanger, safety controls and rear vent, permitting close-to-ceiling installation.

General Gas Light Co.

8. Portable Heating Unit

Instant, safe, clean heat—up to 500,000 Btu's—is provided by the new "Eco-Temp" L. P. gas portable heating unit with automatic firing. Gas tank stores fuel on the job, with hose connection to heater. Just plug-in and turn the valve. The unit goes instantly into operation, with quick rise to temperature and wide-coverage heat that has no smoke or odor. Unit can be furnished with durable flame-proof vinyl coated canvas heat duct, for directing heat to exact spot required.

This new automatically fired "Eco-Temp" heater is available in three regular sizes—140,000 Btu's, 250,000 Btu's and 500,000 Btu's—for all ordinary heating-drying-thawing operations, and in two super sizes—650,000 Btu's and 950,000 Btu's—for excep-

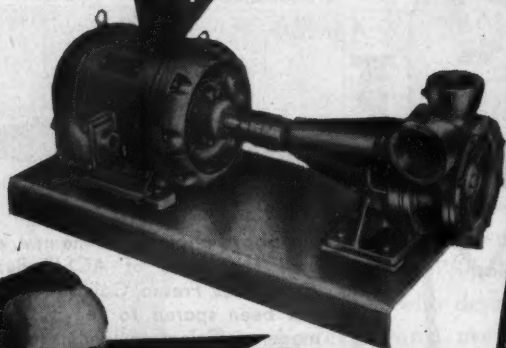


tionally heavy duty, including crop drying. All are built to provide superior strength, durability and safety, assuring long, reliable service with minimum maintenance.

Arthur C. Baumann

they don't
leak any

those
Corken
Good
Pumps



"The pumps
made with Blood
Sweat and Tears"

(A little of yours — a little of mine)

—*Charley Corken*

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206 E. Grand Oklahoma City RE 6-6518

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of the new size

BUTANE-PROPANE
News



A Beautiful DeLuxe Binder

These binders are made especially to preserve copies of your favorite magazine. Holds 12 copies—one full year. Magazines can be inserted or taken out in a second's time, or bound permanently for future reference. Covered with long-lasting maroon Du Pont Fabrikoid with the name Butane-Propane News stamped in gold on cover and backbone. You'll be proud of these beautiful binders. \$2.50 each, postpaid.



BOUND IN A FLASH

Slip open magazine under elastic band it's bound firmly into place. Can be removed just as quickly.



OPENS FLAT

The curved backbone and patented binding system allow each magazine and page to open flat.



BINDS SECURELY

Patented Elasto Cord supports weight of each magazine separately, no mechanical devices to get out of order.



PERMANENT BINDING

Plexon plastic covered wire and instructions supplied with each binder. Replaces elastic cord for permanent binding.

Send check for \$2.50 for each binder
or \$3.00 from countries outside U. S.

- Add 3% Sales Tax for California orders, and 3 1/2% Sales Tax for Los Angeles City orders.

Butane-Propane News
198 S. Alvarado St., Los Angeles 57, Calif.

9. Gas Burner Nozzles

A new 8-inch size "Retain-a-Flame" gas burner nozzle has been added to its previous line of 10 other sizes of nozzles by the Hauck Manufacturing Co.

The "Retain-a-Flame" is recommended for blast firing of air-gas mixtures into open ports of furnaces, or for firing into the open without a combustion chamber, and where a small amount of excess air induced

around the nozzle is allowable. They are useful for firing kilns, heat treating and melting furnaces, ovens, air heaters, boilers, kettles, immersion tubes and for ladle heating or drying.

A gas burning capacity up to 6,200,000 Btu per hour is available from this new 8-inch nozzle with 6-inch W.C. mixture pressure. It supplements the former range of 10 sizes of nozzles from ½-inch to 6-inch inclusive.

Hauck Manufacturing Co.

10. Dual Purpose Heater

Handley-Brown Heater Co. announces production scheduling of the newly conceived "Water-Air" automatic gas water heater and space heater. The new unit has full American Gas Association approval for use with all types gases.

The dual purpose "Water-Air" applies itself easily to a variety of situations. Dehumidification of damp basements, augmenting central heating systems, supplying garage heat or meeting farmers' requirements in the milkhouse are a few of the many applications of this new product.

Utilizing exclusive engineering features the "Water-Air" provides ample hot water and heated air as well. The Handley-Brown Reverse Air Flow principle provides maximum exchange of tank heat. Air travels around the entire tank from the bottom air inlet to the tank top. The tank heated air is then blower driven down through the internal flue to the heat exchanger, located di-



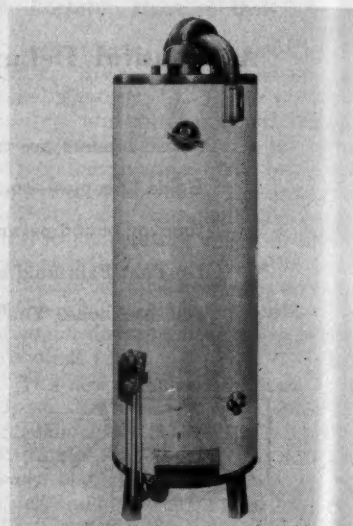
Carter

***LP-Gas**

Carter produces high quality Propane and Butane for both industrial and domestic uses. Our service and products are unexcelled. You can depend on Carter.

Wholesale Only

THE CARTER OIL COMPANY
T U L S A , O K L A H O M A
P. O. Box 801 Phone 2-6101



rectly over the 25,000 Btu burner. Practically all of this heat is available for space heating. The heated air is then expelled at over 120 cubic feet per minute. This same Reverse Air Flow principle stops "stand-by" heat losses.

The "Water-Air" is 66 inches high and 20 inches in diameter with a full 30-gallon water capacity. The new unit embodies endless features such as the extra rugged heat exchanger which means clean, fume-free torrid breezes, the heat holder flue baffle, 100% safety shutoff control and heavy "fibreglas" insulation.

Handley-Brown Heater Co.

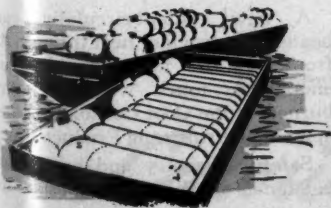
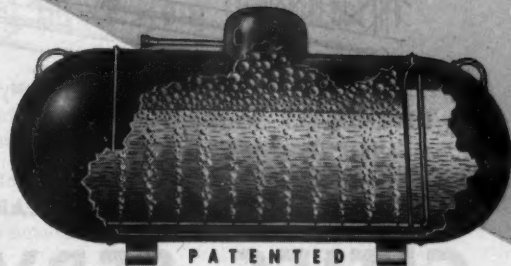


Partners in Profit

Delta's part in the partnership with you for profit is carried out even by Delta Transport drivers. That's why Delta Transport drivers have established an outstanding record of providing the many "extras" to help you in unloading, storing, etc., so that your men in turn can take over and complete their jobs to your consumers' satisfaction.

This spirit of partnership, of teamwork, from steel plates to finished consumers' installations, is a vital part of your partnership in profit with Delta. Currently, approximately 5,951,264 readers in leading farm publications are reached to help you make more sales, more profits. In some areas special premium offers help you reach directly to the customers. Everything within reason is done by Delta people to help you sell systems faster, easier. Delta Transport drivers, craftsmen, sales representatives, and every other member of the team, work with you in constantly setting new and outstanding sales records.

For profits . . . let's be partners!



DELTA TANK MANUFACTURING CO. INC.

P. O. BOX 1469, BATON ROUGE, LA. • P. O. BOX 1091, MACON, GA. • P. O. BOX 431, JEFFERSONVILLE, IND.

Export Office: Suite 110, International Trade Mart, New Orleans, U. S. A.

MANUFACTURERS OF LPG PRESSURE TANKS AND I. C. C. CYLINDERS

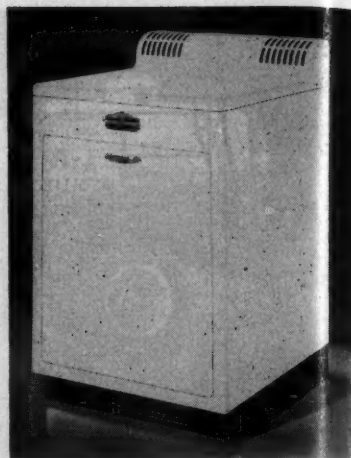
11. Water Heater

Provided with a special opening for installation of a temperature and pressure relief valve, a new 30-gallon C-E Heatmaster table top gas water heater is announced by Combustion Engineering, Inc. The T & P valve opening is provided in the new 30-gallon heater as well as the 20-gallon table top model and is near the top of the tank and under the jacket. An opening is provided in the base of the heater for installation of piping from

the T & P valve to a suitable drain.

The new units are available in both 20- and 30-gallon capacities for natural, manufactured and L. P. gases. For a high input operation, both units are rated at 25,000 Btu per hour with 21 gallon per hour recovery at a 100° temperature rise. Either can be easily converted to a low input operation at 5000 Btu per hour with a 4.2-gallon recovery per hour.

Both sizes are built for flush-to-the-wall installation, made possible by a draft hood built into the top of the



heater. Gas and water lines can be connected straight out the back of the heater, to the back and down through the floor or to the front and down through the floor. A kit is available for converting a Heatmaster table top from high input operation to low or vice versa. This kit is available at a nominal cost.

A folder giving complete design data, specifications, gas and water connections and methods of installing flue vent is available from the manufacturer.

Combustion Engineering, Inc.

12. Circulating Heater

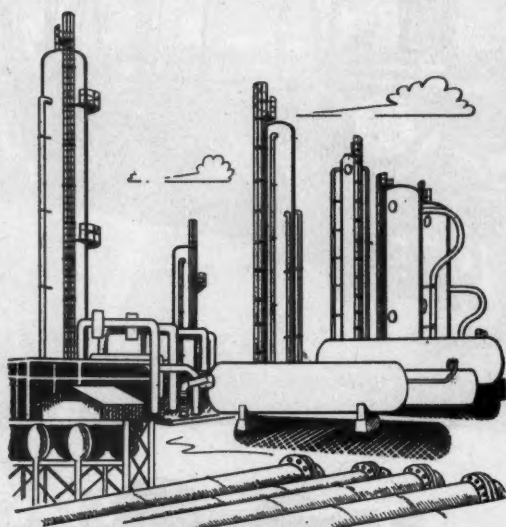


A new radiant-circulating gas heater that provides heat through the front, yet has top and sides cool enough to touch without getting burned, is the Cool Console, a development of Armstrong Products Corp.

Safety, efficiency and beauty are combined in the Cool Console un-

CITIES SERVICE

LIQUEFIED PETROLEUM GAS



... in L. P. gas also Cities Service means Good Service

- A DEPENDABLE SOURCE
- UNIFORM PRODUCTS
- A CAPABLE SUPPLIER
- TWENTY-FIVE YEARS EXPERIENCE

CITIES SERVICE OIL CO.

DELAWARE

Bartlesville, Okla.

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OTHER SALES OFFICES

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A PENNSYLVANIA LP DEALER TELLS WHY HE SELLS CALORIC *GAS* RANGES AND DRYERS



David O. Yorgey

Mr. David O. Yorgey
Yorgey's Appliances
5th Street Highway
Reading, Penna.

**"Caloric Range and Dryer Values are the best
and I make more money buying direct from the factory"**

Direct factory buying is only one of many advantages you'll find when you sell Caloric gas ranges and dryers. Here are some others.

A Constant Pricing Policy . . . always the same for every dealer.

Fifty-two warehouses . . . speedier delivery, faster service, no inventory problem.

Unmatched advertising . . . the heaviest concentration of sustained advertising in the entire gas range industry.

Dynamic merchandising program . . . marketing helps and a point of sale program making the most of Caloric features.

Dione Lucas . . . Gas Cooking TV Show — half-hour weekly in more than 40 markets. A national TV star selling Caloric for you!

Financing . . . an extra-liberal Caloric-financed floor plan.

The name of Caloric . . . the brand name housewives know for modern, matchless cooking.

**Make sure you sell Caloric ranges and dryers
For complete information, check your Caloric representative.**

Caloric

CALORIC STOVE CORPORATION, TOPTON, PA.

vented circulator. Special baffles direct cold air through the bottom and back of body, pass it over the glowing radiants and return the heated air to the room. Radiants are ceramic. Body is finished in a new shade of tan called "Mocha-tone"—a durable baked-on enamel. Available with manual or automatic pilot and a selection of well-known thermostatic controls, the Armstrong Cool Console is 26" high, 14" deep.

Armstrong Products Corp.

Product Information

13. Venting Accessories

American Metal Products Co., Inc. has released literature covering its complete line of metal products for the plumbing and heating trade, which includes Amerivent double-wall aluminum flue pipe and fittings and the Americap natural draft vent cap.

The releases include a jobber's catalog and a dealer sales manual on

Amerivent, the former involving photographs, diagrams and complete specifications, the latter testimonials and reference material.

American Metal Products Co., Inc.

14. Water Heater Catalog

Just issued is the new Sands Manufacturing Co. catalog illustrating and describing their complete line of automatic gas storage water heaters and side-arm water heaters. Also included are coils, relief valves and other accessories for both automatic and side-arm heaters.

Complete specifications of each type are given to make ordering easy. In addition, many helpful installation diagrams are shown both for the automatic and side-arm types.

Sands Manufacturing Co.

15. Catalog and Fittings

Span Brass Manufacturing Co. has published a new catalog covering their entire line of brass fittings, with sketches and specifications on all their products.

Span Brass Manufacturing Co.

16. Tank Heater Catalog

A new catalog on their line of gas-fired tank heaters, including construction details, specifications and photographs, has just been released by Eclipse Fuel Engineering Co.

Eclipse Fuel Engineering Co.

New Publications

A new LP-Gas Handbook of Technical Data has been issued by Fisher Governor Co. especially for "on the job" use. Of pocket-size it is prepared specifically for the salesman, the serviceman, the bulk station operator and supervisor.

Illustrated with sketches and diagrams the handbook contains only data ordinarily and frequently required. An attempt has been made to avoid controversial material, and where methods and standards are shown it is understood that there may be alternate methods just as acceptable and there may be local standards of conflicting nature which will take precedence.

Copies of the handbook are 50 cents.

FOR TOP HEATING EFFICIENCY

BURNERS BY JOHNSON

A BURNER FOR EVERY NEED

When you need dependable burners for steam tables, urns, vats, ovens, or any other type of equipment requiring burners look to JOHNSON for the right burner for the job. JOHNSON has specialized in industrial gas burning equipment for more than half a century.

Every JOHNSON burner is properly designed to assure perfect combustion and highest flame temperature, resulting in more heat for the dollar.

Consult the complete Johnson Catalog for the full Johnson Line of Burners, Torches, Valves, Furnaces and Blowers.

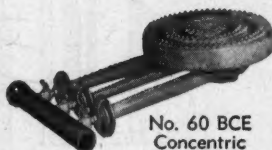
Johnson Gas Appliance Company
597 E Avenue N.W., Cedar Rapids, Iowa



Drilled Pipe
Burner



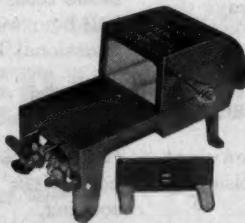
No. 29A
Urn Burner



No. 60 BCE
Concentric
Ring Burner



No. 20X
Cross Type
Burner



No. 101
Bench Furnace

JOHNSON

LP-GAS EQUIPMENT

EXTRA

SUPER-CHEF BUGLE

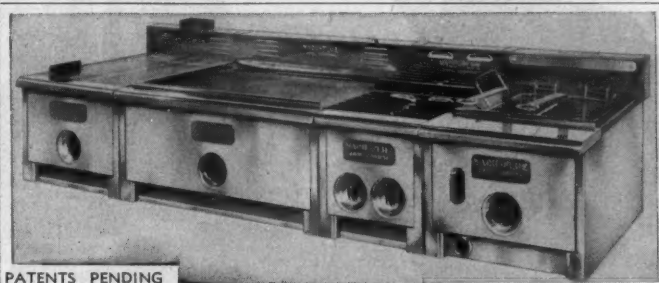
Factory: 12211 Hodges St. — Rt. 3, Box 28
Houston, Texas—Thursday, November 1, 1953.

EXTRA

COOL COOKING VACU-FLUE GAS UNITS EMPLOY NEW INVENTION INGENIOUS FLUEWAY CONCEALED IN BACKSPLASH CARRIES OFF EXHAUST GAS

NO EXHAUST GAS HEAT CAN ESCAPE

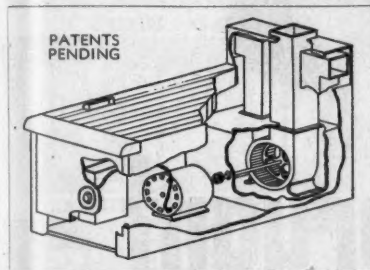
Enclosed combustion chambers insure passage of all exhaust burner heat into the vacuum blower unit. The oversize blower handles multiple unit installations easily. Can be installed between units or at either end and has preparation cutting top.



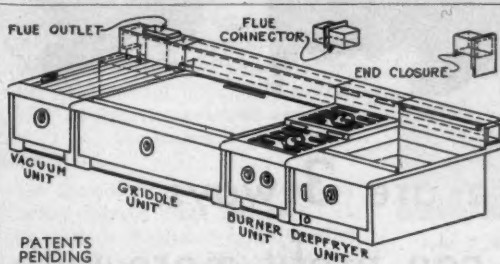
Matching Vacu-Flue stainless steel counter units only 24" deep by 14 3/4" high overall can be installed in any position or combination with only one flue connection exhausting all hot gases.

MAKES VOLUME DISPLAY COOKING POSSIBLE AND PROFITABLE

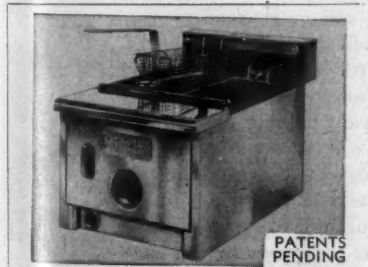
Enthusiastic restaurant operators hail the introduction of Vacu-Flue as they can now obtain the many inherent advantages of gas units without burdening air conditioning or bothering customers with unpleasant heat and combustion products. Counter men and chefs, too, like the cooler surroundings made possible with Vacu-Flue cool cooking units. Patrons enjoy watching their foods being cooked. With increased input and efficiency made possible by the revolutionary Vacu-Flue, large volume cooking can be speedily done right before the customers eyes. Restaurant operators with an alert eye on profits realize the value of faster service and turnover these new units make possible.



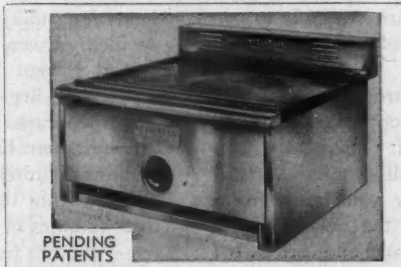
Cut-away of vacuum blower unit shows intakes, insulated blower chamber, motor, switch, maple top with scrap slot and receptacle and discharge outlet.



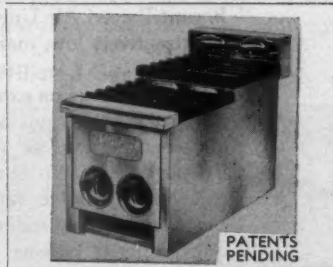
Dotted line shows vacuum flueway of units so arranged to form a continuous flueway when units are banked side by side. Blower unit can be installed on either end or between other units. One connecting sleeve and one end closure furnished with each unit.



Vacu-Flue fryer unit features 11" square fry pot (12 lb. fat capacity), hi-output square burner (4-side applied heat), insulated burner chamber, recessed thermostat, gate valve front drain, removable sediment screen and twin baskets.



Vacu-Flue griddles, 19 1/2" deep, available in 24", 30" and 36" widths with single recessed thermostat on shorter widths and dual recessed thermostats on 36" size. Rear drain slot with deep removable pan below. Heavy, polished, raised edge griddle tops with undersides heavily ribbed for better heat transfer and strength. Hi-output cast iron burners for fast heat and recovery.



Vacu-Flue burner unit features new step design. Louvered openings draw exhaust heat into vacuum flueway. Heavy enameled, removable grates, removable stainless steel overflow trays and non-corroding removable burners simplify cleaning. Recessed control knobs provide instant heat from giant non-clog burners.

EASILY INSTALLED

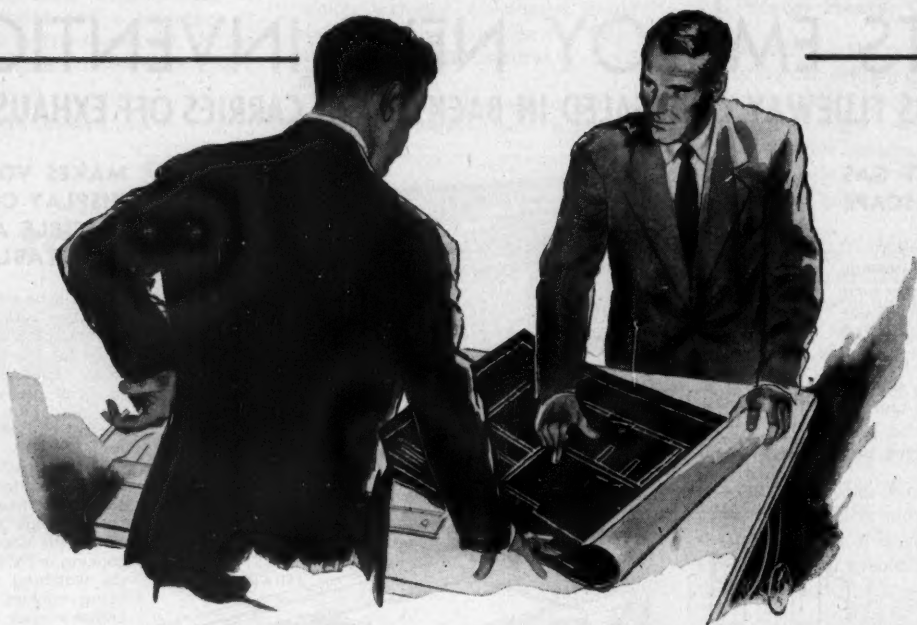
Select the units you require. Place them together in any sequence, connect the gas, plug in the blower cord to 110 or 220V outlet, extend the single vent outlet into a vent pipe, chimney or hood and you are ready for real volume cool cooking. The lower installation cost, lower operating cost and lower maintenance cost bring you increased profits and satisfaction.

VACU-FLUE

COOL COOKING

Manufactured by the originators of SUPER-CHEF, The Fryer of Tomorrow-Today. Just as Super-Chef set a new standard for fryers, so, too, will VACU-FLUE set a new standard for stainless matched counter units. Write or wire Super Chef Mfg. Co., Box 756, Houston, Texas, now so you can be first in your area to cash in with volume display cool cooking by VACU-FLUE.

When it's a call for a **FORCED AIR FURNACE...**



There are **3** ways
you can profit more with **bryant**

1. You can profit more on the initial sale! All Bryant Forced Air Units are available to you at attractively low, margin-boosting prices.

2. You can make an extra profit! Today, many furnace sales present an opportunity to sell air conditioning as well. There are two Bryant lines of central cooling units—vertical and horizontal—to satisfy your need for a broad range of products that meet all requirements of cooling, space and price. It's a single source of supply for the complete job. And you can sell this broad line for installation with all Bryant Forced Air Furnaces—a most practical and positive profit opportunity for you.

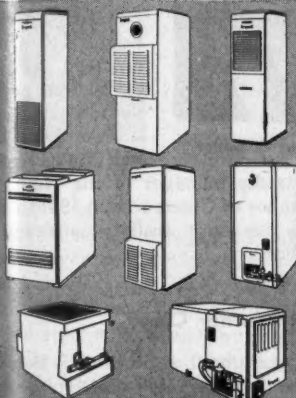
3. You can maintain your profit! Bryant is famous for quality—and good quality means decidedly fewer, profit-shrinking “call-backs”.

And Bryant helps you sell! To strongly supplement Bryant's extensive national advertising program, Bryant heating and air conditioning literature will be sent to over 80,000 families definitely known to be building new homes within the next 12 months. Names of these families in your area will be supplied to you—another reason to investigate this handsome, 3-way profit opportunity today.

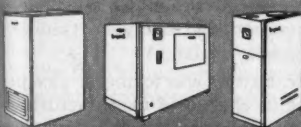
Contact your Bryant distributor for complete information or write: Bryant Heater Division, Affiliated Gas Equipment, Inc., 17825 St. Clair Avenue, Cleveland 10, Ohio.

THE MOST
COMPLETE LINE OF
HOME CONDITIONING
EQUIPMENT IN
THE INDUSTRY

21 FURNACES... 83 SIZES



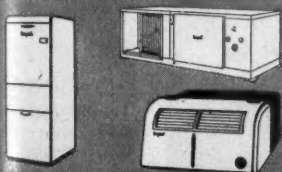
4 BOILERS... 45 SIZES



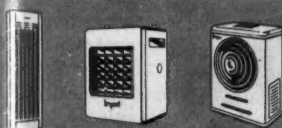
5 WATER HEATERS... 15 SIZES



3 AIR CONDITIONERS... 7 SIZES



6 UNIT AND SPACE HEATERS... 25 SIZES



bryant

HEATING • AIR CONDITIONING • WATER HEATING



American Meter



Robt. L. McAlister



John T. Heffernan

Robert L. McAlister and John T. Heffernan have been appointed to the sales staff of the American Meter Co., manufacturers of precision instruments for the measurement and control of gas, air, steam, oil and other fluids.

Mr. McAlister was graduated from Eastern Illinois State Teachers College with a Bachelor of Education degree and from Rose Polytechnic Institute, Terre Haute, Ind., with a B.S. in Mechanical Engineering. Prior to joining American Meter he was a chemist and assistant supervisor for the Natural Gas Pipeline Co. of America at its Joliet, Ill., measuring station.

Mr. Heffernan was graduated from Iowa State College with a B.S. in Mechanical Engineering and from the University of Washington with a B.S. in Industrial Engineering. He joined American Meter Co. in 1952 as a member of its sales training program after engineering and industrial assignments with Stetson Ross Machine Co. and the Pacific Car and Foundry Co. His new territory assignment embraces the states of Washington, Oregon and Idaho.

J. W. Ostler, manager of the Canadian Meter Co., Ltd., Canadian division of American Meter Co., has announced the appointment of John T. Young as a sales representative for the Western division of the company. Mr. Young comes to Canadian Meter after a great deal of experience in instrumentation in all phases of oil field production and absorption plant

operations. He was in the Turner Valley oilfield with British American Oil Co. for many years. He will handle sales and service for the Western division, South Alberta and Saskatchewan sales territories.

As a member of the Western Division of Canadian Meter Co., Mr. Young will be closely associated with Frank Barchard, who has been manager of the Western division for nearly two years. Mr. Barchard is



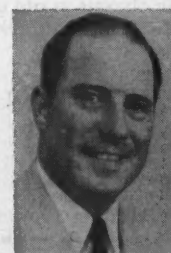
John T. Young



Frank Barchard

well known in the oil and gas circles of the area, having operated Barchard Engineering and Equipment of Edmonton before joining Canadian Meter. Barchard Engineering became the Western Division of the company.

Affiliated Gas Equipment, Inc.



Paul J. Schaeck



Joseph A. Cerny

Promotion of two executives of Bryant Heater Division of Affiliated Gas Equipment, Inc., to important new positions was announced today by James A. Hughes, Bryant general manager and vice president of Affiliated Gas Equipment, Inc.

Joseph A. Cerny has been named manager of the sales engineering and

information section at Bryant headquarters, and Paul J. Schaack has been named Cleveland branch sales manager.

Mr. Cerny, a graduate of Case Institute of Technology, has been Cleveland branch manager since 1951. He joined Bryant in 1940 in charge of controls development. During World War II, he spent two and one-half years with the Columbia University Division of War Research, returning to Bryant in 1944.

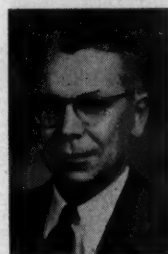
Mr. Schaack, who succeeds Mr.

Cerny as Cleveland branch sales manager, joined Bryant in 1935 as a sales engineer. He was transferred to the Pittsburgh office in 1940 and in 1946 was named manager of sales for the state of Florida and South Georgia.

In 1951, Mr. Schaack was transferred to Washington to serve with the National Production Authority, and a year later was appointed Pittsburgh sales manager. He is a graduate of Rose Polytechnic Institute. His headquarters will be at Bryant's

Cleveland branch office, 2110 East 21st Street.

Anchor Petroleum Co.



Guy C. Miller

Guy C. Miller has been appointed to the position of traffic manager of Anchor Petroleum Co., Tulsa, it was recently announced by W. A. Baden, president of Anchor.

Miller left his position as assistant traffic manager of the Houston Chamber of Commerce in 1947 to become assistant traffic manager of Anchor.

Borg-Warner Corp.

Appointment of Stewart S. Battles to the newly created position of vice president in charge of manufacturing and engineering of the Norge Division, Borg-Warner Corp., Chicago, was announced today by George P. F. Smith, president.

Mr. Battles was formerly vice president in charge of manufacturing of major appliances for Admiral Corp., which he joined after selling his own business to Admiral. Prior to that, he was chief engineer of the Ingersoll Steel Division, Borg-Warner Corp.

In his new position with Norge, Mr. Battles will maintain close contact with the company's plants in Muskegon Heights, Mich., and in Effingham and Herrin, Ill.

Bristol Co.



Ernest Nuber

Ernest Nuber has been appointed sales manager, instrument division, of The Bristol Co., Waterbury, Conn., according to an announcement by H. E. Beane, vice president-sales.

Mr. Nuber joined the Bristol sales engineering organization in 1929. He was made Pacific Coast manager in 1934 and later served for several years as export manager. In 1948 he was promoted to the position of manager, application engineering department.

Mr. Nuber will continue to main-

Carries your shop to the job...



the NEW

Service-Master

BOTTLED GAS SERVICE BODY

Service-Master is designed to speed up your work — styled to reflect the ability of your firm. Its six weathertight compartments include shelves and bins for the tools and parts you'll need on the job.

Whether your chassis is old or new — you'll find it economical to choose Service-Master for your next service body.



1. Weathertight, double-panel doors.



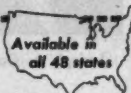
2. 48 1/2" wide loading area, with one-piece ribbed steel floor.



3. Fully enclosed wheel housings.



4. Parts bin with hinged cover and removable dividers.



Available in
all 48 states

McCABE-POWERS AUTO BODY CO.

5900 NORTH BROADWAY • ST. LOUIS 15, MISSOURI

Please send me literature and complete information on Service-Master:

Name

Company

Address

City Zone State

XD

tain his headquarters at the company's main office at Waterbury, Conn.

Butler Manufacturing Co.



Rex C. Hearst

sion manager.

Mr. Hearst will begin his new duties November 1. He was formerly sales manager of Oil Equipment for Butler's Richmond, Calif., plant.

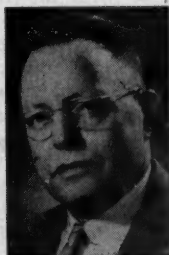
Mr. Hearst has been connected with Oil Equipment sales for eleven years. In 1948 he joined Butler and shortly thereafter was sent to the Richmond, Calif., plant as district sales manager of Oil Equipment. During the next five years, Mr. Hearst was promoted to regional sales manager of both the Oil Equipment Division and the Special Products Division.

Coleman Co., Inc.

The appointments of Alwin B. Newton to the position of chief design engineer and Ray W. Qualley as director of research are announced by The Coleman Co., Inc. Both men are widely known in the heating and air conditioning industries.



Ray W. Qualley



Alwin B. Newton

Mr. Newton, until recently vice president in charge of engineering of Acme Industries, Jackson, Mich., has been associated with major manufacturers of air conditioning equipment and controls since 1930. From 1944 until 1949 he was chief engineer of the Airtemp Division of Chrysler Motors Corp. He is on the board of directors of the Air Conditioning and Refrigeration Institute and is active

in the American Societies of Heating Ventilating Engineers, Refrigerating Engineers and Mechanical Engineers, and holds degrees in mechanical engineering from Syracuse University, Massachusetts Institute of Technology.

Mr. Qualley comes to the Coleman organization from Meyer Furnace Co., of Peoria, Ill., where for the past six years he has been in charge of all phases of engineering. He has also served as supervisor of heating laboratories at the Airtemp Division of

Chrysler Motors Corp. and for 11 years was associated with Minneapolis-Honeywell Regulator Co.

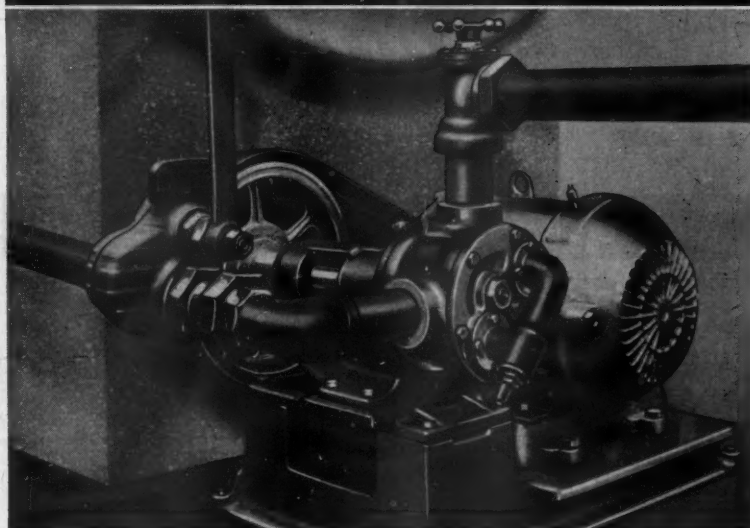
He attended the University of Minnesota and is a registered professional engineer.

Mississippi Tank Co.

Recently added to the staff of the Mississippi Tank Co. were Ed. H. Gill as manager and John H. Allen, Jr. as sales manager.

Mr. Gill has been associated with the steel industry since 1910, having

A VIKING LP-GAS PUMP FOR EVERY JOB



A Viking model KK192 LP-gas pump installation for transferring from tank car to storage and from storage to tank truck.

No matter what your LP-gas pumping problem may be, there is a Viking built to do the job.

1. From tank car to storage tank.
2. From storage tank to tank truck.
3. From storage tank to bottles.
4. From tank truck to customers' storage tank.
5. From customers' tank to equipment use.

All Viking Power-Driven LP-Gas Pumps Mechanical Seal Equipped..



For the complete line,
ask for free bulletins
2303B and SP312B today.



VIKING PUMP COMPANY

Cedar Falls, Iowa

organized the Dixie Steel Manufacturing Co. in Memphis, serving as its president until June 1st, 1950, at which time the plant was sold to Flint Steel Corp. of Tulsa, Okla. He remained as executive vice-president until July. He is a member of the American Society of Mechanical Engineers.

Mr. Allen, Jr. was formerly a member of the Motor Vehicle Comptroller's Office of the State of Mississippi where he was Director of the Liquified Compressed Gas Division, the position which he has held since 1948.

Ensign Carburetor Co.

Ensign Carburetor Co., Huntington Park, Calif., has announced that C. F. Keene, manager of Ensign's Chicago branch, retired as of October 1st after 37 years of service with the company.

"Charlie" Keene served in every department of Ensign throughout his career and moved to Chicago when the branch office was opened in 1929. His work has been outstanding in the field of automotive engineering for many years. He became a member of



A. J. St. George



C. F. Keene

the Society of Automotive Engineers in 1919. The first interest he had with internal combustion engines was very early in the 20th century as a member of racing teams such as old Mercer factory, then located at Trenton, New Jersey. He raced with the great racers of the day such as Barney Oldfield, Ray Haroon and many others.

Taking over the management of the Ensign Chicago branch will be A. J. (John) St. George, who has been with Ensign for 16 years, the last 8 years as assistant branch manager.



A. N. Cave

A. N. Cave has joined the sales-engineering staff of the company at its Chicago headquarters, according to a recent announcement. Mr. Cave, a graduate of Purdue University, comes to Ensign with an excellent engineering training as well as considerable practical field experience with internal combustion engines. His work with Ensign will gradually develop into a position of sales and service, covering the eastern and mid-western states.

Worthington Corp.



Jack McKenna

L. J. MacKenna has been appointed district office manager of Worthington Corp.'s Tulsa office according to an announcement by T. J. Kehane, assistant vice president and general sales manager.

MacKenna has been associated with the company's New York district sales office for the past twenty years and has handled negotiations with some of that office's most import-

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Mean a BIGGER PROFIT RANGE for you!

SHOW any woman these up-to-the-minute Enterprise features and your sales are on their way up.

WAIST-HIGH BROILER... rolls forth when door is opened... broil while baking... no stooping... no burned fingers.

PORCELAIN ENAMEL CHASSIS... built to last a lifetime... single rigid unit... will not rust.

LIFETIME GUARANTEED TOP BURNERS... non-clog aluminum-alloy burner heads... many cooking speeds... easy to clean.

DIVIDED COOK TOP... use all burners without crowding.

LOW PRICE TAG... up to \$75 less than other known brands.



An Enterprise for every kitchen - 33 gas models, 16 electric styles. See your Enterprise distributor or write for free catalogue.

Serving a value-conscious America for nearly 100 Years.

PHILLIPS & BUTTORFF MANUFACTURING COMPANY
NASHVILLE, TENNESSEE



ant customers, including large municipalities and public utilities consulting engineers.

MacKenna joined Worthington in July 1926 after graduating from Northwestern University with a degree of B.S.M.E. His first assignment was at the company's former Blake and Knowles plant at East Cambridge, Mass., as an engineer.

Perfection Stove Co.



H. C. Erhard

Perfection Stove Co. is currently announcing three changes involving sales personnel. Mr. H. C. Erhard, manager of the contract sales department, has been named sales manager of the company's Jersey City, N. J., sales district. Mr. W. B. Gathings, Jersey City district manager, changed to the home office in Cleveland, Ohio, to be assistant to the sales manager of the appliance division. New manager of the contract sales department is H. E. Thomas.



W. B. Gathings



H. E. Thomas

Both Mr. Thomas and Mr. Gathings are veteran employees of Perfection Stove. Mr. Erhard has been with the company the past five years. For 25 years before coming with Perfection he was associated with the Standard Gas Equipment Co., the last 4 years as vice president in charge of sales.

Eureka Williams Corp.

Victor E. Reed has been appointed field sales representative in the Boston metropolitan area for the Williams Division of the Eureka Williams Corp., Bloomington, Ill., manufacturer of Oil-O-Matic, Gas-O-Matic and Air-O-Matic heating and air conditioning equipment.

Until joining Eureka Williams, Mr. Reed was plumbing and heating manager of the Haverhill Hardware and Plumbing Supply Co., and in previ-

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METALBESTOS— the insulated vent

assures permanently safe and efficient venting because it is designed solely for use with gas appliances. The latest and most comprehensive venting research yet undertaken proves conclusively that only a properly designed vent pipe will safely and completely remove all the products of combustion. It demonstrates the importance of such factors as heat loss through the vent, the location and size of vents and the material from which they are made.

METALBESTOS IS DESIGNED SPECIFICALLY FOR VENTING GAS APPLIANCES

- insulated, double-wall construction
- inner hot stack carries off vent gases without condensation
- cooler outer pipe protects adjacent walls
- made of corrosion resistant aluminum, won't break or crack, lasts the lifetime of the house.

METALBESTOS INSTALLS EASILY AND SECURELY

- pipe sections automatically aligned by special couplers
- joints tightly sealed, won't pull apart
- adjustable fittings for fast, exact installation

Write for free VENT INSTALLATION HANDBOOK

Contains complete, up-to-date information on gas appliance venting and many helpful installation tips. Based on latest authoritative venting research. For your copy write to Dept. M-1449-A.



METALBESTOS

DIVISION

WILLIAM WALLACE COMPANY • BELMONT, CALIF.

ous years had served as a salesman and oil burner installation man for the firm. Previously he also was associated with the W. H. Cranton Co., Haverhill, operated his own wholesale heating business, and worked at the Crane Ship Yard, Ispwich, Mass., and the Walsh-Kaiser Ship Yards, Providence, R. I.

Super-Chef Manufacturing Co.

Phillip M. Pappas, president of Super-Chef Manufacturing Co., recently announced the appointment of

J. H. Kennedy



James H. Kennedy as general sales manager.

A native Texan, Mr. Kennedy grad-

uated from Cumberland University Law School. Merchandising, sales and dealer relations attracted his attention early in life due to his keen interest in meeting and helping sales people with their problems. For the past seven years Mr. Kennedy has been district representative for Super-Chef Manufacturing Co. in the southeastern states where he has become affectionately known to the dealer trade as "Big Jim."

As general sales manager, Mr. Kennedy will supervise the work of the eleven Super-Chef district representatives that cover the dealer trade throughout the United States and he is looking forward to meeting and assisting dealers and their salesmen.



7 Reasons

WHY YOU SHOULD CHECK SUNRAY . . .

- ✓ 1 PROMPT DELIVERY.
- ✓ 2 CONVENIENTLY LOCATED PLANTS.
- ✓ 3 DEPENDABLE SERVICE.
- ✓ 4 TRAINED TECHNICAL PERSONNEL.
- ✓ 5 UNIFORM QUALITY PRODUCTS.
- ✓ 6 32 YEARS OF PETROLEUM EXPERIENCE.
- ✓ 7 FULL LINE OF LPG PRODUCTS.

Yes, — 7 is a lucky number — but in this business LPG dealers can't depend upon luck alone. That's why SUNRAY can make *your* problems much easier. Prompt delivery service and a dependable source of supply means everything.

SUNRAY has plants that offer a full line of LP-Gases in Arkansas, California, Kansas, Louisiana, Oklahoma and Texas.

WRITE, WIRE OR TELEPHONE

SUNRAY OIL CORPORATION

General Office • First National Bldg.

5th & BOSTON

TULSA 3, OKLAHOMA

Whirlpool Corp.



Jack Sullivan

Jack Sullivan has been appointed sales promotion manager of the dryer and ironer divisions of Whirlpool Corp. it was announced today by L. W. Howard, director of sales promotion and advertising.

For the last year, Sullivan has been laundry equipment sales promotion manager for Bendix Home Appliances, South Bend, Ind. Prior to that he was product promotion manager for Zenith Radio Corp., Chicago, Ill., for three years. He is a graduate of Loyola University.

Utility Appliance Corp.

Utility Appliance Corp., Los Angeles, has announced the addition of a new line of automatic gas water heaters to its present lines of furnaces, heaters, ranges and other well-known gas-fired products.



F. L. Line

At the same time, appointment of Forrest L. Line as director of sales for its new water heater division was announced. No newcomer to the gas appliance industry, Line joined Utility Appliance Corp. earlier this year.

Before World War II, Mr. Line served in a sales management capacity for a major water heater manufacturer. Formerly headquartered in Portland and Los Angeles, he is widely acquainted in the wholesale

and retail plumbing field throughout the West. He has announced his division will work closely with all associations, all utilities and other groups interested in furthering the sale of water heaters.

Delta Tank Manufacturing Co.



John T. Nesser

John T. Nesser, assistant sales manager, has been appointed general manager in charge of the new Delta Tank Manufacturing Co. plant, now under construction in Beardstown, Ill., according to an announcement by Hal S. Phillips, president of Delta.

Mr. Nesser and his family have taken residence in Beardstown, and invite dealers to visit Delta's new plant.

Rufus Vernon has been appointed office manager for the new Beardstown plant, Mr. Phillips also announced.

Delta's new Illinois plant will be completed in the very near future, and although a grand opening is scheduled for early spring, friends and customers in the midwest area are invited to visit Delta's office.

J. E. Ketner, vice president and sales manager, said that general manager, John Nesser, plant superintendent, John Hansen, and Rufus Vernon are at the plant site now putting the finishing touches to production facilities.



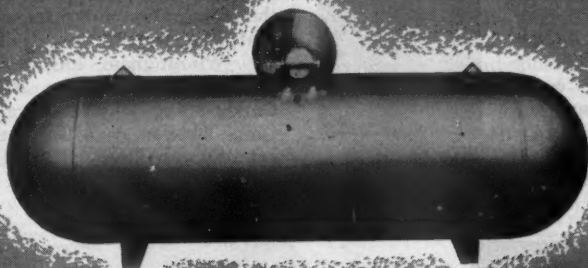
Rufus Vernon

Crown Stove Works

Walter F. Rogers, president of the Crown Stove Works, has announced the appointment of Warren A. Stuckey as chief product engineer. Mr. Stuckey comes to Crown with a broad knowledge of the gas industry, having been formerly connected with the Florence Stove Co., Moore Corp. and Kalamazoo Stove Co.

Mr. Stuckey replaces J. L. Bright, who has retired after more than 43 years with the company. He will direct all development, research and engineering of all new products as well as current products.

YOUR MONEY'S WORTH



**FLINT
LPG
TANKS**

FLINT LPG TANKS are sturdily built for longer use yet are light in weight. FLINT TANKS are easy to handle, easy to install. Weather proof heads protect fittings. Built in strict accordance with ASME code for 200/250# working pressure and meet all state requirements. Seven sizes from 120 to 1000 gallons. Also: 6000, 18,000 and 30,000 gallons.

**BUILT RIGHT TO
SELL RIGHT**

SEE THEM AT YOUR BONDED DEALER

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MEMPHIS, TENNESSEE

TULSA, OKLAHOMA

NOTHING SAFER THAN

TiteSeal

FOR LP-GAS CONNECTIONS

**THE PERFECT
SEALING COMPOUND**

**WON'T HARDEN
OR CRACK**



**ABSOLUTELY
LEAKPROOF**

**NO THREAD
SEIZURE**

RADIATOR SPECIALTY COMPANY

GASKET AND JOINT SEALING COMPOUND

CHARLOTTE, NORTH CAROLINA

Gasinator Manufacturing Co.

Mr. A. S. Katz, president of Gasinator Manufacturing Co. of Cleveland, announces the appointment of Harold Winningham & Co. of Seattle, San Francisco and Los Angeles as Western states regional



H. W. Winningham

representative for Gasinator gas-fired automatic disposal units.

Mr. Harold W. Winningham, President of Harold Winningham & Co., has represented Calcinator Corp. in the west for the past 10 years, and in this capacity his firm has pioneered the incineration and disposal field in that area. During the past 25 years, Mr. Winningham has represented such firms as Norge Heating & Conditioning Division-Borg Warner Corp., Thomas A. Edison, Inc., Stewart Warner Corp., United Motors Service, etc., in the Western states.

New and enlarged general offices of the Harold Winningham Co. will shortly be finished in the Medical Arts Building, Seattle, and improvements are being arranged in branches.

Rockwell Manufacturing Co.



A. A. Familyant

A. A. Familyant, Los Angeles district manager of Rockwell Manufacturing Co.'s Meter and Valve Division, has been named general manager of the company's Macnick Division at Tulsa, Okla., L. A. Dixon, Jr.,

vice president, announced today.

Mr. Familyant succeeds W. M. Connor, who will supervise sales and production liaison between the Division's national headquarters at Pittsburgh and divisional plants and field offices, Mr. Dixon said.

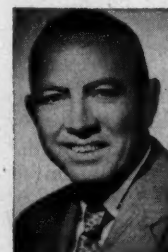
E. M. Cloran, Western regional supervisor of gas products sales, succeeds Mr. Familyant as Division district manager.

Mr. Familyant, who began his business career as assistant editor of Western Business Papers, Inc., in 1934, joined Rockwell in 1938 as a sales engineer.

In 1945, he went into business for himself for two years as partner and general manager of All-American Fabricators in Los Angeles, then spent two years as sales supervisor of Republic Supply Co. of California.

Rejoining Rockwell as valve supervisor in 1949, he was named Los Angeles district manager in January, 1952.

Master Tank & Welding Co.



A. V. McMurray

A. V. McMurray has been promoted to the position of sales manager of Master Tank & Welding Co., Dallas, Tex., according to an announcement by Sam O. Weempe, owner.

Mr. McMurray will be in charge of sales to all divisions of the industry where Master products are used, which includes refineries, L. P. gas, transportation, storage, pipelines and the bottling market. Closely associated with the petroleum industry since 1927, he has been with Master Tank & Welding since 1948.

NEW
one-man

APPLIANCE TRUCK



No. 79C
Appliance
Truck. Handle
length 60"
Nose width 24"

▲ This Thomas special appliance truck is designed for easy, one-man operation. Ends back-breaking lifting of stoves, crates, refrigerators, water heaters, etc. Double-braced tubular steel frame. 10x3.00 full pneumatic tires, Hyatt bearings. Furnished with 2 web straps. Order on "return if not pleased" basis. Thousands in use.

THOMAS TRUCK & CASTER COMPANY

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AUTOMATIC INCINOR GAS-FIRED INCINERATOR

A "MUST" in Homes with Automatic Heat
A FULL-PROFIT LINE • NO TRADE-INS
INCINOR IS APPROVED BY A.G.A. LABORATORIES

ACT NOW FOR COMPLETE DETAILS
INCINERATION DIVISION, BOWSER, INC., CAIRO, ILL.

McNamar Boiler and Tank Co.



J. E. Hardegree

J. E. (Jerry) Hardegree has been advanced to the position of sales manager of the L. P. gas division of McNamar Boiler and Tank Co., Tulsa, Okla., following the resignation of M. C. Bolin, who has accepted employ-

ment outside of the industry.

Mr. Hardegree has been associated with McNamar for the past six years and has a wide acquaintanceship among L. P. gas dealers. At one time or another he has traveled all the sales districts served by his company. The last district so served was that of South Dakota, Nebraska and Kansas.

Cities Service Oil Co.

Ferril M. Miller has been named resident plant engineer for Cities Service Oil Co.'s Chicago terminal and compound plant. As resident plant engineer, Miller also will head the technical service department of the plant.

Roy Petterson will succeed Miller as resident chemist at the plant's laboratory.

Servel, Inc.

Theodore W. Rundell has been appointed vice president in charge of operations at Servel, Inc., it was announced today by W. Paul Jones, president of the company.

Rundell will have the over-all responsibility for production and inspection, engineering and research, purchasing, personnel and labor relations, and product planning. All present personnel in direct charge of these various divisions and functions remain unchanged.

Rundell has held the position of vice president in charge of engineering since February, 1952. He was born in Helena, Mont., and attended high school in Libby, Mont. He received a B. S. degree in electrical engineering from Ohio Northern University. He served as a refrigeration engineer for the Westinghouse Electrical & Manufacturing Co., of Springfield, Mass., from 1929 to 1939. In 1939 he joined the Philco Corp. of Philadelphia as assistant chief refrigeration engineer. In 1947 he was promoted to chief refrigeration engineer.

G. Howard Christine has been promoted to manager of the contract sales division of Servel, Inc., accord-

ing to an announcement by James F. Donnelly, vice president in charge of sales.

Mr. Christine will supervise Servel's sales activities in the multiple housing field and contractual relations with manufacturers who purchase Servel appliance products in large quantities.

He has been with the company for 11 years. Formerly he was a contract sales representative. Other positions he has held at Servel include buyer in the purchasing department, sales spe-

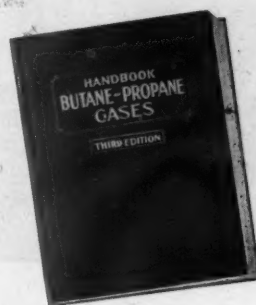
cialist and dealer representative in the Chicago sales branch.

Four new appliance sales managers in the Miami, Philadelphia, Albany and Milwaukee sales districts of Servel have been appointed by the company, it was also announced.

The new managers in the districts are: J. R. Lumpkin, Miami; Frank D. O'Sullivan, Philadelphia; Early Cunningham, Albany; and C. Sidney Johnston, Jr., Milwaukee.

Mr. Lumpkin joined Servel in 1937 as a sales promotion representative.

HANDBOOK BUTANE-PROPANE GASES



- Up-to-date technical facts on LP-Gases.
- 352 Pages. Illustrated with Charts, Diagrams and Photographs.

Check this partial list of contents.

INTRODUCTION

The Progress of the Industry and the History of its Development.
The ABC of LP-Gas, an Introduction to LP-Gas Operations.

PHYSICAL AND CHEMICAL PROPERTIES

Properties of the Hydrocarbons in LP-Gas.
Properties of Butane-Propane Mixtures
Volume Correction Factors
Analytical Determination and Testing

PRODUCTION OF LP-GAS

Natural Gasoline Plants, Recycling Plants, Oil Refineries

TRANSPORTATION AND STORAGE

Delivery by Truck, Rail, Water, and Pipe Lines
Storage Tank & Pressure Vessel Design
Liquid Metering and Pumping Systems

UTILIZATION OF LP-GAS

Comparative Performance with other Fuels
Appliance Installation and Testing
Domestic Applications
Commercial Applications
Industrial Applications
Enrichment, Peak Load and Standby Uses
A Fuel for Internal Combustion Engines

DISTRIBUTION OF LP-GAS

Installing and Servicing LP-Gas Systems
Semi-Bulk Systems
Bottled Gas Systems
Gas Utility Service from Central Plants
Multiple Utility Service from a Central Plant

REGULATIONS

N.B.F.U. Pamphlet No. 58 (1947).
Motor Carrier Regulations
Freight Regulations
Unloading Tank Cars
Marine Regulations

APPENDIX

LP-Gas Insurance
Handy Tables for Field Use
The Interchangeability of Other Fuel Gases with Natural Gases
Flame Weeding
Bibliography
Glossary of Terms

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**Threads 4 sizes of pipe fast with 1 set
of dies—and it won't jam!**

RIDGID 65R PIPE THREADER

This popular 65R has saved millions of hours of threading time, and no wonder—its one set of self-contained high-speed dies adjust to 1", 1½", 1¾" or 2" pipe size in 10 seconds! Mistake-proof self-centering workholder sets instantly! And lead screw won't jam on workholder, kicks out automatically at standard thread length! You can't match it for fast easy pipe threading—buy it at your Supply House.

THE RIDGE TOOL COMPANY • ELYRIA, OHIO



He formerly was contract sales representative for the company's southern region with headquarters in Atlanta. Now he will be responsible for appliance sales in Florida and southeastern Georgia.

Mr. O'Sullivan, who was previously district sales manager for the Bridgeport, Conn., area will now represent Servel in eastern Pennsylvania and all of New Jersey.

Mr. Cunningham, formerly a sales training representative, now will cover the company's activities in central and eastern New York state, western Massachusetts and all of Connecticut.

Mr. Johnston was formerly merchandising counselor for the company's public utility division. Now he will represent the company in Wisconsin, Minnesota, and North and South Dakota.

Sunray Oil Co.



J. B. Smith

James B. Smith, formerly executive vice president of the Vickers Petroleum Co. Inc., Wichita, Kansas, has been named a vice president and manager of sales for Sunray Oil Corp., according to an announcement here recently by Sunray chairman C. H. Wright and W. C. Whaley, president. Mr. Smith will also become a member of Sunray's management committee.

Mr. Smith will correlate the company's sales activities for all finished petroleum products produced at Sunray's two Oklahoma refineries at Allen and Sunray Village (Duncan), and the natural gasoline and liquefied petroleum products produced at the various field plants in which Sunray has an interest in Oklahoma, Arkansas, Texas and Louisiana.

Smith has been associated with the Vickers company since 1937 and has been a director and vice president of that company since 1941. He has served as a director and officer in Sovereign Service, Inc. since 1940 and has been active on various oil marketing committee.

William E. Emery

William E. Emery, assistant manager of the crude oil purchasing

department, Carter Oil Co., Tulsa, Okla., passed away at his home recently, following a heart attack.

Mr. Emery was a native of Parsons, Kan., and an employee of Carter for more than 34 years, having joined the company in 1919.

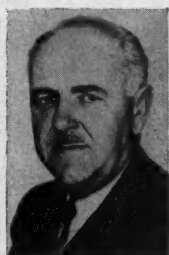
Mutual Appoints Warren Souders

Announced by Joseph E. Fagan, president of Mutual Liquid Gas and Equipment Co., is the appointment of Warren Souders to the company's sales and field staff. After serving Mutual in both manufacturing and sales departments, Mr. Souders is particularly well qualified to assist L. P. gas dealers with any problems relating to heating and industrial applications. He will travel extensively in the United States with headquarters at the company's main plant in Los Angeles.

Emsco Manufacturing Co. Adds Swivel Fitting Line

In a trend to wider diversification of the "Emsco" line of oil field and related products, the addition of a swivel fitting department has been announced by William T. Powell, president of Emsco Manufacturing Co.

Emsco has acquired the swivel fitting business of the Rasmussen Manufacturing Co. of Hollydale, Calif. These fittings formerly sold by them



William T. Powell E. R. (Pop) Atkins

under the trade name "Ramsco" will be known as "Emsco" swivel fittings.

Heading up the swivel fitting sales program will be E. R. (Pop) Atkins, long known throughout the oil industry. For over twenty-five years Mr. Atkins has been associated in the manufacture and sale of swivel joints, rotary heads and rotary pressure hose for both domestic and export markets. Pop Atkins, a member of the Nomads, will make his headquarters at the Los Angeles plant of the Emsco Manufacturing Co.

Give yourself the Unbeatable Performance of the **RIDGID** Heavy-Duty Pipe Wrench



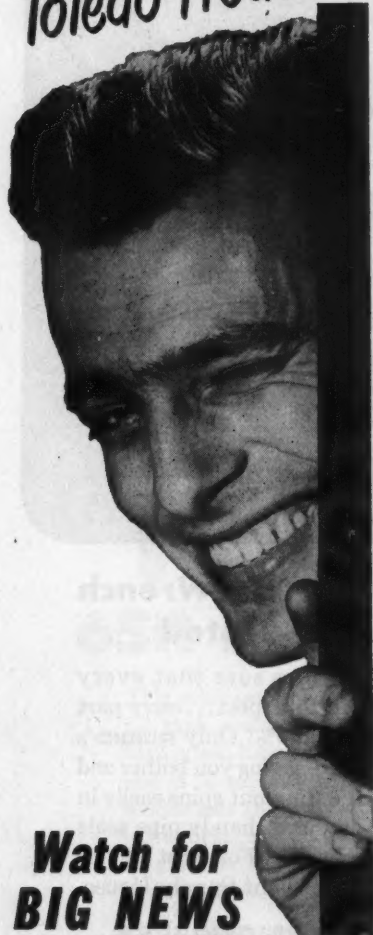
Every RIDGID Wrench Factory-Tested

That's what makes sure that every RIDGID performs as you've learned to expect...every part inspected, every wrench pipe tested 100%! Only RIDGID's housing is unconditionally guaranteed, saving you bother and expense. Full-floating hookjaw, adjusting nut spins easily in all sizes, 6" to 60"; replaceable alloy jaws, handy pipe scale on hookjaw, comfort-grip I-beam handle. For most service for your money, buy RIDGID's... at your Supply House.

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WOW!
I've just
seen the new
Toledo Products



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BIG NEWS**

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**THE LEADER — PIPE TOOLS •
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Growth Through Cooperation

By **Mort Farr**, Past President,
National Appliance & Radio-TV
Dealers Association



Mort Farr

FOR years we have been shown,* as the classical example of co-operation, two donkeys hitched together pulling in opposite directions toward the stacks of hay and getting both hungry and tired in the process. Then a change comes over them and, together they eat first one of the hay-stacks and then the other. That, we were told, is what cooperation can bring about.

There are several things wrong with this example. First, I don't like the idea of being compared to a donkey. The least they could do was make it an elephant. Second, I've seldom encountered exactly equal strength between the agencies expected to cooperate; one is usually able to have its way often to the discomfort of the other. Third, cooperation based solely on getting something seldom lasts very long; cooperation calls for a lessening rather than a serving of selfishness.

I should prefer to have, as my shining example of what can be brought about through cooperation, a great, beautiful and lasting piece of architecture. I like the thought of the master artist who conceived the idea, the efficient contractor who brought about the welding of forces to execute it, the adroit financier who was able to assemble the funds to make it possible, the conscientious laborer who did the work, the landscape artist who created the setting, and the users and the observers who appreciated the results all pooling their talents, their loyalties, their wills for accomplishment and their capacities for teamwork to bring it about.

But it doesn't have to be a physical building. It can be an economic structure, too. It can be our business.

It can be members of the L. P. gas industry, coming from all parts of the United States, leaving their businesses, losing a little, too, so that they can band together in Chicago for these three days, reassure each other that they're all on the same

wonderful, going-places team, and return home the richer for the experience and the more confident of the glorious future of their industry.

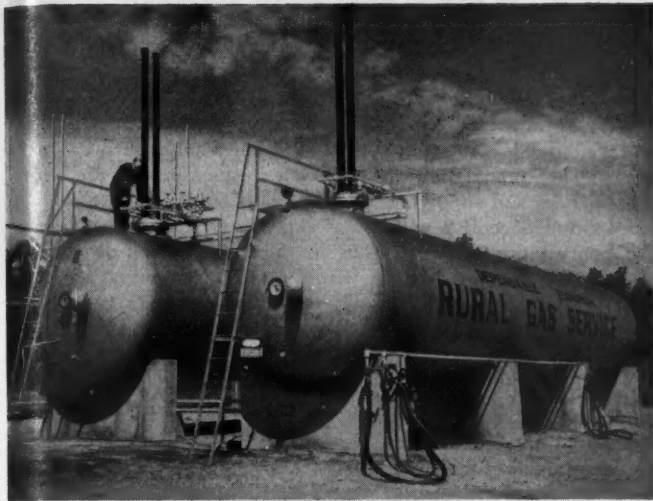
Don't think, because back home you've a little trouble with your customers, your competitors or your suppliers, that this is a rugged thing you're in and it's a case of the devil take the hindmost and what's-the-good-of-it-all anyway? . . . you fellows here in this room have won the respect and the regard of your competition perhaps better than you realize.

Let me quote briefly from a talk given by a brilliant and highly regarded electric utility executive recently before the Edison Electric Institute to show you what your competitors think of the job you've done:

"One of our most aggressive competitors is the petroleum industry. In direct competition with us, this young industry has built up a hard swinging sales force to dispose of its L. P. gas. Thirty years ago this saturated hydrocarbon was a wasted by-product of the industry, but in 1951 it marketed four billion gallons. Better than 70% of this production of LPG was sold for motor fuel and domestic use, and the remaining 30% successfully competed against us for our industrial customers. On the farms LPG is used for water heating, milk house heating, home heating, for chicken and turkey brooding, tractor fuel, refrigeration, clothes drying and cooking.

"The L. P. gas people claim that 16% of all farms use their product for cooking. They believe their domestic market is mostly rural and that we are their strongest competitors. Using every promotional technique, they are going after a greater share of the rural sales. Through advertising in national farm papers alone they claim they reach 13 million families each issue. This is ex-

*Presented at the LPGA National Convention, Chicago.



How Rural Gas Service gets all the gas they pay for

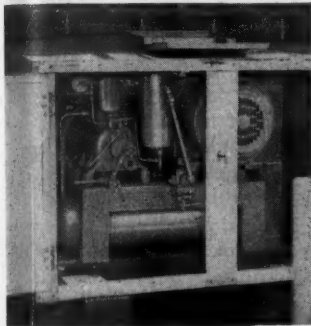
Large New England gas company installs modern Worthington transfer unit

The Rural Gas Service in Westfield, Massachusetts, supplies LP gas to some 40,000 customers throughout New England. Because theirs is a volume business, Rural has to squeeze every drop out of the tank cars which deliver the gas to them.

That's why they installed the new, compact Worthington LPG Transfer Unit to move the LP gas from the tank cars to their storage tanks. The Worthington unit gets all the gas, including the residual vapor.

Take a lesson from Rural and don't leave your profits in the tank car. Learn how quickly a Worthington LPG transfer unit will pay for itself in gas saved. Write for Bulletin H-609-BIA to Worthington Corporation, Harrison, New Jersey.

N.3.4



EVERY DROP OF GAS, including residual vapors, is removed from tank cars at Rural Gas Service.

WORTHINGTON LPG TRANSFER UNIT is a compact, self-contained assembly comprised of compressor, motor, starter, suction surge drum, oil filler pot, valves and pressure gauges.

WORTHINGTON



LPG Transfer Units



PROPANE TRUCK TANKS FOR ALL DELIVERY NEEDS

In streamline (illustrated) and walkway types, 1,181 gal. to 1,700 gal. water capacities. Constructed in accordance with A.S.M.E. Code, par. U-69, 200# w.p., or A.S.M.E. Code, 1950 edition, 250# w.p. Mounted on your chassis complete with valves, fittings, pump, hoses. Unit ready for immediate use when picked up. Write for details.

Also 500 gal. and 1,000 gal. Domestic Tanks
(Salem System)

Storage Tanks
Up to 8,000 gals.



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SALEM 5, ILLINOIS



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SPAN always ships quick...your order's going out IMMEDIATELY!

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COPPER TUBE FITTINGS

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SPAN gives the fastest shipping service in the industry, because SPAN manufactures and stocks a huge inventory of Copper Tube Fittings. Write for catalog and price list of high quality flared fittings, compression fittings, and valves.



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WHEN

YOU SELL...



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- Rochester Criterion Gauges
- Hose and Fittings
- Weco-Trol (Automatic control)
- ICC Cylinders
- Okadee Valves
- Brunner LP Gas Compressors
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clusive of state and local papers and direct mail advertising.

"Their distribution system is very effective. They have distributors and dealers in every rural area. Nearly always the distributor is also an appliance jobber. The combination of selling the appliances and supplying LPG provides a dual incentive with interlocking opportunities for profit."

That's what E. O. George, of the Detroit Edison Co., told his colleagues, your competitors, about you.

I'd be mighty proud of such a rating by my competitors. And if I'd been given such an evaluation, I'd try all the harder to stand up to them better in future years. Let me make myself clear here. As a representative of the National Appliance and Radio Dealers Association—we call ourselves NARDA—I'm not in anyone's corner. I'm not for the electric or the gas utility or the L. P. gas industry in preference to either of the others. Our interest is that every element of this industry be as healthy, wholesome and constructive as possible, that the public be served well, and that the dealer be a prospering, well regarded factor in the appliance

industry. Perhaps that's why I was honored with the invitation to come visit you and given the subject of "Growth Through Cooperation."

We can only go in one direction and succeed. Failure to grow in industry is to start on the road to economic death. But how to grow? At the expense of some other element in the industry? If not, do you ride with the tide? Do you sit back and let the other elements carry you? None of these things.

Individual Is the Key

The individual is still the key to his success. If he has an aggressive sales policy, if he has sound financing, intelligent controls over his business, understanding of credit—with collections hard if credit-granting is soft or the other way around—if he has the capacity to think big, to know and love his product, to convince his customers of his own sincerity and his desire and ability to serve them—success must come to him.

Nobody will legislate a profit for you. Nobody will herd customers into your place of business. The big, basic, local fight is yours to win or lose. And the reward that goes with victory goes to you.

But conditions that create a favorable atmosphere are something different. They can make it tougher to succeed or increase the likelihood of your success. If a whole industry is working together to sell the world on it, priceless missionary work is being done setting up those customers for you to find and sell to. It's here, in the recognition of your responsibility to the others in your field, that cooperation enters.

I'm a dealer. I think the distributor who sells me my appliances has the responsibility of helping me make money. He should give me the best and most honest advice he can about what I should buy and in what quantities, and he should give me help in thinking up ways of selling it, including help in training my salespeople to sell. His responsibility to me doesn't end until a sale to my customer is completed to everyone's satisfaction.

It's surprising, but most dealers agree with me in this.

But here's something not all dealers have given thought to: I also have an obligation to my distributor to help him make money! I owe it to him to feature the brands we both



Preferred!

BY LPG DEALERS EVERYWHERE

LOOK AT THESE ADVANTAGES:

1. Rectorseal #2 won't dissolve in LPG, natural or manufactured gas, anhydrous ammonia, freon or water.
2. It's thin in the can . . . thick in the joint.
3. It never hardens, cracks, crumbles or gets brittle.
4. It's smoother, cleaner—easy to use without waste from the brush-top cans.

AVAILABLE IN: 1 pt., ½ pt. and ¼ pt. BRUSH-TOP CANS.

Write Today for Free Sample

RECTORSEAL, Dept. "A"
 2215 Commerce St. Houston 2, Texas

RECTORSEAL #2

MAKING THE L-P GAS INDUSTRY SAFER

NO. 2

PLUMBERS FURNACE

Mutual

YOUR FIRST CHOICE

MOST EFFICIENT AND VERSATILE LP-GAS FURNACE BUILT

Light a match and—POOF—you're in business. Demonstrate this furnace to plumbers and maintenance men and you've made a sale.

This Mutual furnace employs the principle of the venturi to assure perfect combustion; uses less gas and more air. Produces a hotter flame and does the job faster. Will melt 60 pounds of lead in 12 minutes. No smoke, no priming or pumping.

This unit is well balanced, will not tip over, and is extremely rugged to withstand severe abuse. The No. 2 Furnace fits Mutual 12 and 20 pound ICC cylinders. The No. 2-A bench model may be used with any Propane cylinder. The No. 2 and No. 2-A Furnaces include non-warping head, adjustable orifice and tube, and removable handle and shield. Simplicity of design, having only three main parts, makes the Mutual No. 2 and No. 2-A furnaces dependable and fool-proof.

Like all Mutual products its design reflects years of engineering "know-how". A demonstration will win a new customer.



NO. 2A BENCH
TYPE FURNACE

Send today for free catalog on Mutual's complete line.

Member L.P.G.A.

Mutual



LIQUID GAS EQUIPMENT CO., INC.

3638 WEST IMPERIAL HIGHWAY • INGLEWOOD, CALIFORNIA

NOW! MORE AND FASTER DELIVERIES at LOWER COST!

New and faster methods of material handling in loading and unloading trucks have offset the rising costs of delivering merchandise of every description. Now Anthony Lift Gates reduce costs still further by: lighter weight—to permit more payload per trip—more payloads per day; by using only ONE cylinder and ONE control lever for ALL operations—greatly simplifies and cuts manual time per delivery—74% fewer operating parts minimizes maintenance.

10 important reasons why Anthony Lift Gates can cut your delivery costs up to 50% are explained in New Brochure just off the press. Send for your copy today.



One Cylinder alone does all operations — opens, closes — lifts and lowers gate.



Patd. & Pats. Pend.
U.S. and Foreign

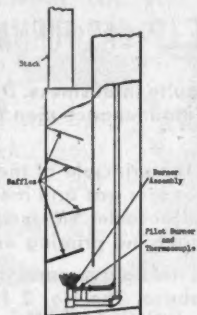
ANTHONY The Power to lower delivery costs.

LIFT® GATES

In sizes up to 4000 lbs. for
all trucks and semi-trailers

ANTHONY COMPANY
STREATOR, ILLINOIS • DEPT. 168

The G-50 Stock Tank Heater



CUTAWAY SECTION
OF HEATING CHAMBER
SHOWING BAFFLES

The G-50 Bottled Gas Stock Tank Heater gives economy, perfect operation and elimination of condensation to the greatest possible degree because of the baffling system as shown in the cutaway section. These baffles reduce heat loss, prevent the burner from being blown out, and hold condensation directly above the burner where it is vaporized and passes out the stack.

It is simple to install as it clamps to the side of the tank with two screws. Both Automatic and Manual controls available. Weight approximately 70 lbs. Patent Pend.

Manufactured by
Nebraska City Iron Works
Nebraska City, Nebr.

Mallinckrodt
**ETHYL
MERCAPTAN**
purified

it says LOOK OUT

- The accepted standard odorant for natural or liquefied petroleum gas — gives sure but harmless warning.
- Purified — Moisture-free — PROTECTS FIXTURES. Meets all 15 qualifications of National Bureau of Standards.



MALLINCKRODT CHEMICAL WORKS
Mallinckrodt St., St. Louis 7, Mo.
72 Gold St., New York 8, New York

sell, to stick with my brands once I've chosen them carefully and not be wooed away by every trick ad promotion or offer of a trip to Outer Mongolia that my distributor's competitors use as bait. I owe it to my distributor to help him meet his sales quota for my territory and, if I don't do these things which help him, I haven't a legitimate right to ask him to give me any special consideration or more than the most casual treatment.

Similarly, my distributor and the manufacturer have reciprocal obligations. The same goes for the suppliers of fuel or power whose wares are absorbed by the products I sell and whose making those wares available to my customers make it possible for me to sell those products.

Write A Friend

Sometimes when the day's been pretty tough and you've been stuck with a repossession and you're sick of looking at the same old merchandise you've seen in the store for the past several weeks, and the salespeople seem extraordinarily uninterested in either you or them making money, and your promotional ideas just seem wrong or used up, it's easy to get the idea that you're stranded somewhere and alone in this world without a friend. The next time you get that feeling, think of this meeting here, this bunch of your fellows in the same industry. Think of them having similar feelings sometimes, and drop a note off to someone you meet today or tomorrow or Wednesday saying what your toughest problem is and asking whether he hit anything like that before. He'll feel flattered and good about that note, and he'll write back and ask your advice in the same letter that gives you his.

Nothing drives that old depressed feeling away like that.

Never fail to at least try to talk any problems over that affect you and other fellows on the team before you cut loose with criticism. It's possible that you can work out an entirely satisfactory arrangement for adjusting the trouble. At least try. If we only worked a little harder to see things from the other fellow's viewpoint, we'd have a much richer opportunity for success. Price cutting would be less. Trade-in allowances would be more valid. Troubles

would be fewer and profits would be greater.

Net operating profit for the average dealer during 1952 was 3.2 percent. His gross margin—32 percent—his total operating costs—28.8 percent.

That's not a very good showing, men. Let's see where they placed the blame for their troubles:

First was *reckless price cutting*. I blame this on cowardly selling. Jack Stoutenburgh has a little story on this in this month's Television Retailing. Customer walks in and says "That's the best picture I've ever seen. It's the clearest and brightest, and the sound is out of this world!"

Said the salesman: "I'll give you 30 off."

Second was *excessive trade-in allowances*. When there were just a few trade-ins involved in this business, it wasn't costly to be loose in trade-in practices, but this same study shows that 69 percent of refrigerator sales have a trade-in involved, 62 percent of washers and 50 percent of ranges. In 1948, the respective figures were 18, 27 and 16 percent!

NARDA and the National Appliance Trade-In Guide Publishing Co. of Madison, Wis., have come up with a trade-in blue book that can do a great deal to help stabilize trade-ins. Again, it's a job for an entire industry cooperating to get these sensible trade-in values established in this industry as they are in the auto field.

In the third place were discounts allowed by the manufacturer. Generally we've found the manufacturers sensitive to dealer interests, and we have no doubt that there will be adjustments made in this. If not, the dealer has no alternative to dropping unprofitable lines and handling those that allow him to earn a living.

And, in order, the other causes dealers named for their poor showings were shortage of good salesmen, back-door selling, consumer sales resistance, too many competitors, overproduction, misleading advertising, a series of criticisms of TV, and competition from co-ops.

We have a job to do, one of improving our conditions, of strengthening our individual operations. By recognizing our own faults first and working and selling harder to correct them, then by approaching others who can help us create a better economic world in a spirit of fair play and healthy cooperation, we can grow.

L.P.G. yields utmost heat with

holly
NarrowWall

HERBOLD'S
LITTLE ROCK - TRAVEL CLERK
BOSTON - JEWELLER - CUFFS

STANDARD 2-194
440 EAST COLORADO BLVD.
PASADENA 2 - CALIFORNIA

Sept. 23, 1953

Holly Manufacturing Co.,
975 S. Arroyo Pkwy.,
Pasadena 2, Calif.
Attn. Mr. F. Farmer, Sales Mgr.

Gentlemen:

We consider the Holly NarrowWall to be an ideal wall heater for retail stores.

Since installing our NarrowWall, we have noted with satisfaction how dependably and well it keeps our customers comfortable, with complete safety for them and our entire sales personnel.

One of the most important advantages, in my opinion, is the fact that the venting eliminates from the air the not inconsiderable amount of moisture which an unvented appliance would be constantly pouring out into our store.

Our Holly takes up no floor space, giving full flow to store traffic. Also, the secondary heat exchanger provides us with extra warmth at no extra fuel cost.

The attractive streamlined front panel is in harmony with modern store design and merchandise display.

It's a pleasure for us to be able to recommend the Holly NarrowWall for the stores of every kind and size.

Very truly yours,

HERBOLD'S

F. Farmer

Secondary Heat Exchanger (Pat. No. 2602441, exclusive with NarroWall, is AGA approved as an integral part of the heater. It draws air from floor level, heats it and discharges it as additional warm air. It assures cool walls above the heater.

HOLLY MANUFACTURING CO.

917 S. Arroyo Pkwy., Pasadena 2, Calif.

Without obligation please send me complete facts about Holly NarroWall designed for L. P. gases.

NAME

ADDRESS

CITY ZONE STATE



Easy to install
Fully guaranteed



CHARLOTTE D-HYDRATED ASME CYLINDERS

Heavy welded steel construction for long, safe, dependable service. Rugged, large diameter foot-ring for extra stability.

AVAILABLE SIZES	SHIPPING WEIGHT
57 gal. - 200 lb. Propane cap.	215 lb.
86 gal. - 300 lb. Propane cap.	330 lb.
126 gal. - 420 lb. Propane cap.	440 lb.



Optional as extra equipment — Magnetic or Slip Tube Gauge and Regulator.

FURNISHED COMPLETE WITH LOCK-TYPE HOOD AND FITTINGS.

Write today for full details and prices on our line of D-Hydrated ASME Cylinders. Engineered Truck Tanks. D-Hydrated LP Gas Systems. Duo-Tested Anhydrous Ammonia Tanks.



CHARLOTTE TANK CORPORATION

Post Office Box 8037

Charlotte, North Carolina

GUARANTEED to be dry tanks. Charlotte D-Hydrated ASME Cylinders are built to provide maximum safety.

CERTIFIED to meet exacting ASME specifications. Working pressure 250 psig, Underwriters' Approved.

**LOOKING FOR THE
FASTEST, EASIEST
AND MOST
ECONOMICAL WAY
TO PROTECT VITAL
EQUIPMENT?**



Try Champion

Order 12 gallons today. It's your best paint buy for maximum savings in both labor and material cost... and for economical, long-lasting service.



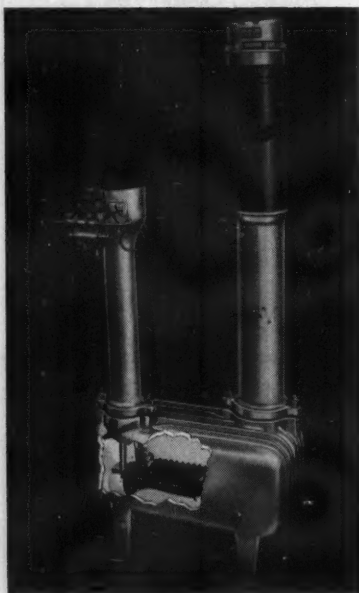
That's right, Champion "L.P. Gas Hi-Chrome Aluminum Paint #55" does the best job of maintaining and conserving vital equipment with an absolute minimum of labor and materials... a maximum in savings.

Time tested and quality proven, this custom-made paint brushes or sprays easily on all equipment... forms a tough, protective covering that withstands long, hard usage. Makes an almost indestructible coating on refill cylinders... conditioning them for the frequent, rugged handling they get.

Quick drying (5-10 minutes), Champion L.P. No. 55 Chrome lets you stencil and complete refill cylinders in less than one hour. And it has an exceptional covering capacity. With only 6 gallons of this custom-made paint, you can cover up to 200 standard cylinders—and it stands considerable more thinning down! Here's real economy!

**CHAMPION BRONZE
POWDER & PAINT CO., INC.**
2526 West Van Buren Street
Dept. Butane
Chicago 12, Illinois

Blue-blaze STOCK TANK HEATER



MODEL 960

Features:

- Drilled Port, Cast Iron Burner with Venturi Manifold
- Patented Blue-Blaze Vent Caps keep efficiency high regardless of winds
- All burner adjustments made at factory
- Simple installation. Does not require attachment to stock tank
- Automatic Temperature Controls optional

*NO CONDENSATE PROBLEM

Condensate is caused by warm, moisture-laden air hitting a cold surface. The Blue-Blaze Tank Heater has cast iron boiler walls over 1/4" thick which retain sufficient heat to eliminate the cause of sweating, normally encountered with thin wall construction. Thin wall vent stack, only source of condensate, is drained by weep holes.



Write for literature and prices

TESCO Incorporated

112 S. NORFOLK • TULSA, OKLA.

WEEP HOLES for condensate* escape. SELF SINKING heavy walled Cast Iron construction.

Answers to Problems on Page 69 of the October Issue

Problem 1. The important things to check are brakes, tires, steering, lights, clutch, transmission, and the engine. The daily check of the tires is visual, and while inspecting them, the driver should also look under the truck for evidences of leaking oil, gear grease, brake fluid, gasoline (if used instead of propane), and radiator water. A leak of any of these substances calls for immediate determination of cause and arrangements for the necessary service work at the appropriate time—which is "right now" if it is brakes or gasoline. While looking under the truck, the driver should also be alert to discover any dangling parts, evidences of broken springs, and other defects which can be seen. The water and oil should be checked daily, and the under-hood area looked over for visible defects such as fuel leaks, bad wires, etc.

The morning routine before leaving the yard should include a service check of brakes, steering, and condition of clutch, transmission and engine. This can be done quickly and thoroughly by driving the truck forward far enough to go through the gears, and then in reverse, checking the effectiveness of the emergency brake while rolling, and stopping in both directions with the service brake.

The manager can be sure that this daily check-up is followed by getting to work on time, and watching what happens in the yard. The morning check-up should be supplemented by a report to be turned in at the end of the day, over the driver's signature, requesting that certain service work be done, or stating that the vehicle is not in need of service work. Speedometer reading at the end of the day should be stated, and this should be checked against the lubrication record card for the vehicle, to make sure that needed lubrication is not neglected.

Problem 2. Tires, insulation on wires, oil and grease exposed anywhere on the engine or chassis, much of the internal material in the cab, and the fuel used to propel the vehicle will burn if ignited. Many types of cargo will also burn, including L.P. gas, if conditions develop which will permit it to escape into the atmosphere.

The accumulated oil and grease on the engine or chassis should be cleaned off frequently enough to prevent them from becoming a fire hazard. The fuel system should be maintained in leak-free condition. Gas-

line is a particular hazard under the hood, because of the human tendency to overlook the hazard of a slight leak. A slight leak can ignite many other flammables under the hood, particularly oil, if it is allowed to leak over the engine.

Problem 3. This is the \$64 question. We included it to lead all of your staff to give serious thought to one of your most serious problems. These problems vary with different companies, so the details of the answers must also vary. We think the best thing we can do in connection with this whole problem is to report the details of successful programs developed by other operators to reduce highway and traffic accidents. A summary of several of these successful programs will be presented in an early issue. In the meantime, you can be well along with the analysis of your own company problem.

Problem 4. A good driver never "rides the bumper" of the vehicle ahead. If his and the other vehicle are moving at approximately the same speed, he stays behind at a distance at least 50% more than the reaction distance shown in the diagram on page 67 of the October issue. Because of the difficulty of estimating the speed and distance of slow vehicles moving ahead of him, he either begins to slow down, or speeds up to overtake, at a still greater distance behind the vehicle ahead.

Problem 5. The proper procedure for controlling a skid is to leave the clutch engaged, allow the engine to go "on compression" by moving the right foot to the brake pedal, using very light pedal pressure on the brake, and turning the front wheels so they line up in the direction that the vehicle is skidding. Severe braking, disconnecting the clutch, or turning the front wheels in any other direction than "with the skid" will result in throwing the vehicle still further out of control. You must reduce the speed without locking wheels, and lead the front end back to a safe position.

Problem 6. Legal responsibility is something that only the courts can decide. But let's look at this from the basis of "Who would have been able to prevent this accident?" We will nominate three people, (1) the driver who continued to operate the vehicle without doing anything about the brakes after he discovered they were bad; (2) the previous driver, who knew they were bad but did not report their condition; and (3) the manager who allowed his organization to become so unsafety-conscious that two drivers so obviously ignored the fundamentals of safety.

More sales appeal than ever!

The NEW Improved SIEBRING GAS BURNING TANK HEATERS

NEW
RADIATOR
DESIGN!
ASSURES
CONSTANT
BURNER
OPERATION

A
PROFIT
MAKER
for
L-P
GAS
DEALERS

SIEBRING leads the way again with a new elevated radiator design that eliminates all dead air pockets and draft stoppages. These big, husky gas burning tank heaters are made with fully automatic, semi-automatic and manual controls. Let us tell you about our attractive prices and big dealer opportunities right now in an expanding market.



EVAPORATOR
ELIMINATES
ALL
CONDENSATION
TROUBLE!

Plus EXCLUSIVE

PATENTED HEAT BAFFLE

Reduces heat loss to absolute minimum.

SIEBRING MFG. CO.
GEORGE, IOWA

WRITE for
Full Details
NOW!



TRUCK TANKS

- Twin or single barrel
- Light weight
- Low in cost
- Full or semi streamlined

ASME U69

Built to Your Specifications and Size

Write For Further Information and Prices

**BAGWELL-GENERAL
STEEL CO.**

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Key to
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BARBER

slotted-cap JET

Barber Burners equipped with the famous Barber "slotted-cap" jets are available in round, oblong, and square shapes with inputs of 7000 to 198000 B. T. U.

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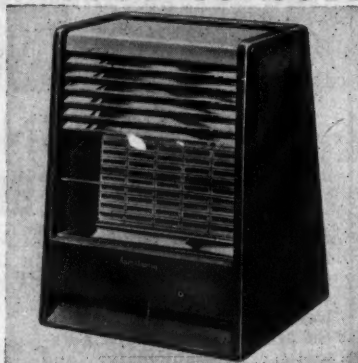
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3032 Superior Ave. CO.
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ARMSTRONG

Presents Their New
COOL CONSOLE



A brand new radiant heater for any gas—with top and sides cool enough to touch without getting burned.

This safety feature, added to Armstrong high quality workmanship and beauty of design, makes it one of the finest unvented circulators ever developed. Body is finished in an attractive new shade called "Mocha-Tone". 26" high, 14" deep, 16½" wide for 24,000 B.T.U., 19" wide for 30,000 B.T.U. AGA approved.

ORDER FROM YOUR JOBBER
or write for literature on the
complete heater line.

ARMSTRONG PRODUCTS CORP.
Quality Since 1899

Dept. BP

Huntington 12, W. Va.



Petrolane, Ltd. Expands; Enters Nevada Field

Petrolane, Ltd., with home office and general offices in Long Beach, Calif., recently formed a new corporation at Carson City, Nev., known as Carson Nu-Gas Corp. The new corporation has purchased Mr. George L. Gottschalk's interest in the Carson Nu-Gas Co., which has been owned and operated by George Gottschalk for many years. Mr. Gottschalk will continue as manager of the local firm under the new name of Carson Nu-Gas Corp. Petrolane operates similar businesses in Sparks and Bishop in this area, as well as many places in California.

"It is a source of great satisfaction to me," Mr. Gottschalk said, "to be able to assure my customers that I will always be able to supply them with all the liquefied petroleum gas they require at all seasons of the year. Under this new affiliation the capacity of my bulk storage facility in Carson will be doubled immediately."

Mr. Gottschalk has just finished a year as president of Nevada Liquefied Petroleum Gas Association. Mrs. Gottschalk has been active in community affairs, serving last year as president of the PTA.

Mr. P. E. Foote, Petrolane's president, states that work is already started toward installing a new 20,000 gallon propane storage tank at Carson City and that the Carson Nu-Gas building will be remodeled and made ready to carry a complete line of gas appliances for their customers in the Carson City area.

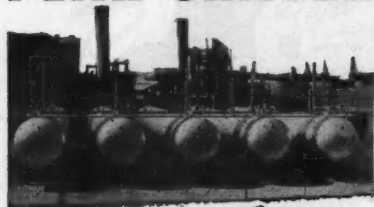
The controlling interest of the Washoe Propane Gas Co., 720 Glendale Road in Sparks, Nev., has been sold to Petrolane by its former owner, Mr. John Verhaal, who will continue as manager of the company.

Mr. Verhaal is an old timer in the L. P. gas business and his many friends and acquaintances are happy to know of his new association with Petrolane.

The newly organized Washoe Propane Gas Co. has added an additional 30,000 gallons of LPG storage and has built a new home with retail appliance showrooms and service facilities. All of the gas appliances handled by Petrolane in its other retail stores throughout California will be carried and displayed by the Washoe Propane Gas Co. at Sparks.

With the addition of the Sparks and Carson City plants, Petrolane now offers LPG service facilities in more than 20 localities in California and Nevada and operates retail appliance stores in many areas.

PEAK SHAVER



BY **DRAKETOWN**

This packaged propane plant designed, engineered and built by Draketown, provides a completely interchangeable fuel for natural gas.

Draketown can design and build one for you, within your budget, to take over all or part of your load at the turn of a valve.

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100% TOWN OR PLANT SUPPLY

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First See GRIFFITHS for CONVERSION PARTS

We can supply a wide assortment of spuds, orifices and other parts for converting domestic and commercial equipment to any type gas. Also, a complete line of repair parts for all types of gas meters.

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**E. F. GRIFFITHS
COMPANY**

350 EAST WALNUT LANE
PHILADELPHIA 44, PA.

Serving the Gas Industries
For Over 40 Years.

Control Equipment

(Continued from page 72)

thermostat is the standard model.

On floor panel heating jobs, an electronic immersion thermostat is used in addition to the indoor and outdoor thermostats. This acts as a stabilizer to avoid too low a panel temperature in milder weather, and in colder weather, prevents floor panels from heating beyond the comfort level—the maximum of which is about 90°F.

Whether or not you are familiar with electronic control, it is felt that this brief comment on its features should be presented, because you will be encountering more and more electronic controls in the years to come.

There is nothing complicated or mysterious about electronic control, and if you are not already familiar with this type of equipment, you will be surprised with its simplicity of installation and service. Thermostats in the electronic system operate in unison to start and stop the burner or circulator. This type of control is also used to operate a zone valve or damper, just as any conventional "on-off" thermostat. In the near future, electronic modulating control will also be available for all domestic applications using zone valves and dampers.

Solenoid Valve Division Purchased By Eclipse Fuel Engineering Co.

Eclipse Fuel Engineering Co., Rockford, Ill., has recently acquired the Solenoid Valve Division of Wheaton Engineering Co., Wheaton, Ill., as announced by Mr. A. Campbell Perks, president of the Rockford company. The purchase includes complete production equipment, patents, engineering drawings, etc.

Production of solenoid valves, to be listed as Eclipse Series "DO", will begin in Rockford early in October. Valves range in size from $\frac{3}{8}$ " to $1\frac{1}{2}$ "; operating pressures range from .5" W.C. to 150 lbs. per square inch. They can be used for gas, oil and water systems.

Eclipse Fuel Engineering Co. at present manufactures a line of industrial furnaces, gas and oil burners, process steam boilers, dowtherm vaporizers, combustion equipment and controls, meter bars and gas distribution specialties.

STEADY VAPOR PRESSURE UNDER ALL WEATHER CONDITIONS!

IS ASSURED WITH

PARACOIL STEAM TYPE LPG VAPORIZERS

- Continuous full load output at any desired gas pressure, regardless of ambient temperature conditions, is a "GUARANTEED CERTAINTY" with the industry-tested Paracoil Steam Operated LPG Vaporizer.
- Unique drainage system prevents condensate freeze-ups.
- Entirely safe. No gas flames used. Operates on low pressure steam.

DESIGN

- ASME Stamped, Par U-69. Inspection Certificates on Order N.B.F.U. Pamphlet 58, Latest Issue.

Write for

ADDITIONAL DATA AND PRICES

TYPE 48-E VAPORIZER

STANDARD PRODUCTION MODELS UP TO 6000 GPH

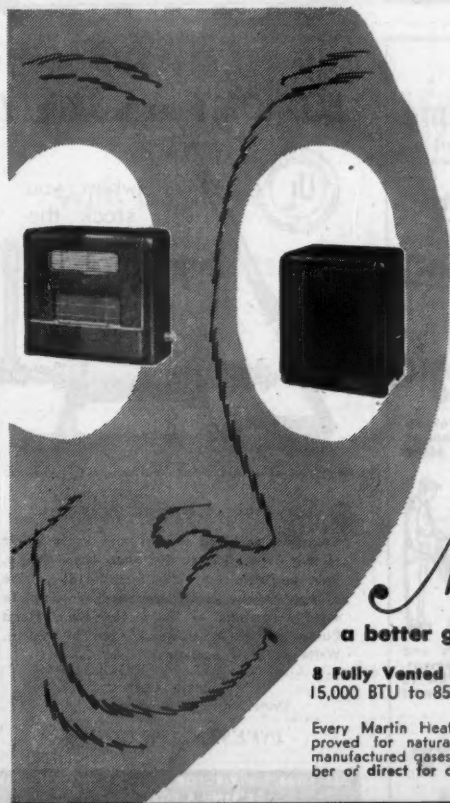
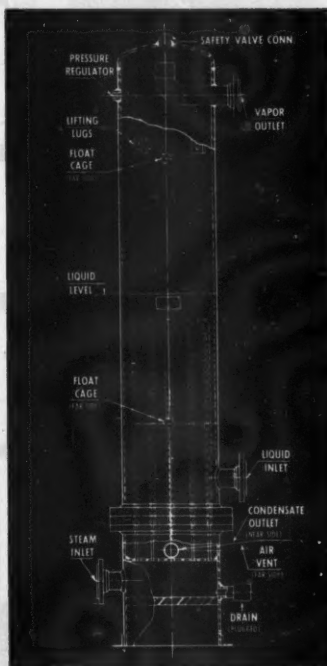
DESIGNS MAY BE VARIED TO MEET

SPECIAL JOB CONDITIONS

DAVIS ENGINEERING

CORPORATION

1058 EAST GRAND ST., ELIZABETH, N. J.
30 ROCKEFELLER PLAZA, N. Y. 20, N. Y.



would you
like to
SEE
more heater
SALES?

stock the complete

Martin
LINE

a better gas heater for every need

8 Fully Vented Heaters 15,000 BTU to 85,000 BTU
22 Unvented Heaters 10,000 BTU to 50,000 BTU

Every Martin Heater is AGA Approved for natural, liquefied and manufactured gases. Write your job order of direct for complete catalog.



Over
45 years
stove
experience

MARTIN STAMPING & STOVE CO., Huntsville, Ala.



REGO LP GAS EQUIPMENT

- Rochester Criterion Gauges
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- ICC Cylinders
- Okadee Valves



GAS DEALERS ... Double Your Income

We are signing franchises with bottle gas dealers all over "hard water" America.



You have the set-up and the customers. Deliver rental softener units to homes, laundries, beauty parlors, cleaning plants ... wherever soft water is needed.



All you need are the softener units and the inexpensive regeneration equipment. Franchise includes the sale of DOWEX to all domestic, commercial and industrial areas.

Write, wire or phone

FILTER-SOFT Corporation
Dept. BPN
12911 ARTESIAN AVE., DETROIT 23, MICH.

An Efficient Specialized Service for the

LP-Gas Industry
One of the Midwest's Finest Stocks of

**Brass Fittings
Copper Tubing
Tools for Tubing
Valves and Cocks
Orifices and Kits**

Prompt Shipment
Write for catalog and full details



YOU'RE SELLING BOTH ECONOMY and SAFETY



when you stock the



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SEE YOUR DISTRIBUTOR FOR FULL INFORMATION
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D. H. KRUG COMPANY
DEPT. 50, MADISON, SOUTH DAKOTA

Mississippi Meter Proving

(Continued from page 55)

a lesser scale. The fact that so many meters have been giving away gas is bringing in more and more meters to be checked. The saving of these stock losses has more than repaid these dealers for the most expensive repair bills to date.

The meter provers have also given us complete evidence that proper care and maintenance of meters pays off. Some of the first meters checked had been in service for six or more years, and had received the best of attention with proper preventive maintenance. When the tests on these meters were finished, they were found to be accurate within one tenth of one percent. On the other hand, a newer meter was found to be so scored by trash and foreign particles that extensive repairs were necessary before an accurate reading could be maintained. The driver stated that as far as he could remember, the strainer had never been cleaned. It was evident that this was true because a large amount of rust scales, trash, and foreign matter was found in the strainer when the metering unit was overhauled.

Check Piping Before Testing

Before a metering test is run, it is necessary to check the piping of the metering unit to see that is properly installed. A meter cannot be expected to register correctly unless provisions are made to prevent the vapor from passing through the meter and registering as liquid. In a few cases it has been necessary to check the vapor return line from the differential valve to see that it is passing vapor, and not liquid.

Some meters are unable to give correct readings because they are not the correct type for this service. Gasoline meters will not measure L. P. gas. Low pressure meters are not accurate in propane service, because they were designed to be used with butane or low working pressure butane-propane mixtures. These meters may give false readings because the higher pressure of the propane distorts the body, causing the gears to bind so they cannot register properly.

One of the greatest benefits that the dealers are receiving as the result of the meter proving is customer sat-

isfaction from the knowledge that the dealer's meter is accurate. The news soon gets around that Joe Doe's Butane Gas Co. has had all their truck meters checked to see that they are making honest delivery. The delivery man, if he is worth his salt, is very proud of his job and his company, and he makes the most of this opportunity to brag about the way his boss looks after the customer's interests. The dealer has the satisfaction of being able to show his customer the proof that his meters are maintained in the best of condition. He is also, in many cases, locating and eliminating the principal cause of the loss of gas shown in his annual inventory.

The development and use of this proving unit gives conclusive evidence that private industry can provide a workable answer to such problems of public interest, without being forced into an unwelcome solution by legislation. The L. P. gas industry of Mississippi is to be commended for its foresight in meeting this need without pressure, and for setting up their own policing system so as to forestall regulatory pressure. As long as the present meter proving system functions on the present basis, we see no need for legislative action covering this phase of the industry.

Beaird Issues New Promotional Packet

A new packet of promotional materials is now available to L. P. gas dealers, according to an announcement by Richard Meisenbach, manager of sales of L. P. gas and anhydrous ammonia systems, The J. B. Beaird Co., Inc., Shreveport, La.

The packet includes new consumer mailing pieces and sales literature, radio spot announcements, newspaper advertising mats, window banners, and decals. All materials in the packet play up the fact that Beaird "Moisture Free" L. P. gas systems now bear the Good Housekeeping Seal.

The packet, being distributed by mail and by Beaird representatives in the firm's 36-state sales area, includes all materials for a complete consumer promotion program. All materials are supplied by Beaird without cost to dealers. Dealers may secure the packets by request from The J. B. Beaird Co., Inc., Shreveport, La.

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"No Choice But To Expand" Says Mark Anton



Mark Anton

have no choice but to expand."

Mr. Anton, in a statement issued at Whippany in conjunction with the anniversary dinner, traced the history of the company from a small distributor of bottled gas in 1928 to a \$42,000,000 corporation with distribution in sixteen states built around the sale of domestic, commercial and industrial gas service and appliances. Suburban also distributes anhydrous ammonia, a high nitrogen fertilizer, and offers a marine gas service from Maine to Florida.

"Our company has been built on service," Mr. Anton declared, "and I see no sin in bigness. I sincerely believe that if we continue our high service standards we have no choice but to expand and that we will continue to grow and prosper. In our six-state anhydrous ammonia operation, distributing Suburban "HiN," we have gained great insight into the ever-changing needs of agriculture and have endeavored to develop a true farm service that will result in better crops and higher yields for farmers, with less labor on smaller acreage."

Recalling his original difficulty in obtaining a bank loan to finance the company, Mr. Anton predicted that Suburban, nearly as old as the LPG industry itself, will continue to expand ever farther into the rural areas with new residential developments.

Phillips Is 30th Company In Billion-Dollar Class

An announcement from Bartlesville, Okla., reveals that 36-year old Phillips Petroleum Co. recently became the 30th corporation in American industry with total assets in excess of one billion dollars.

In the past five years alone Phillips has more than doubled its size, and it is nearly four times larger than it was 10 years ago. During this period Phillips rate of growth has been the greatest of any of the billion dollar companies, which include 10 oil com-

panies. Founded in 1917 with 27 employees and assets of three million dollars, it is manned today by over 23,000 employees and owned by more than 85,000 stockholders.

K. S. Adams became president of Phillips in 1938 and is now board chairman and chief executive officer.

Early in its history Phillips pioneered in developing commercial uses for the "casinghead" gasoline produced with crude oil and the liquefied petroleum gases produced as manufacturing by-products. The company for many years has ranked high as a producer of natural gas liquids and as a producer-marketer of liquefied petroleum gases.

Company Formed To Operate New Pipe Line

The Oklahoma-Mississippi River Products Pipe Line, Inc. is being organized to construct and operate a petroleum products pipe line from Oklahoma to the Mississippi River, it was announced here today by C. H. Wright, chairman, and W. C. Whaley, president of Sunray Oil Corp.

Officers of Sunray are directing preliminary organization of the new corporation, and negotiations are under way with pipe line construction contractors and others concerned with plans for the new pipe line, Mr. Wright and Mr. Whaley declared.

The new line as proposed will have

its western terminus at Sunray Village (Duncan), Okla., where Sunray operates a catalytic cracking refinery, and will probably be routed across south central Oklahoma, entering Arkansas in the vicinity of Fort Smith, passing nearby to Conway, north of Little Rock, with eastern terminus in the area of Memphis, Tenn.

Bryant Promotes New Water Heating Lining

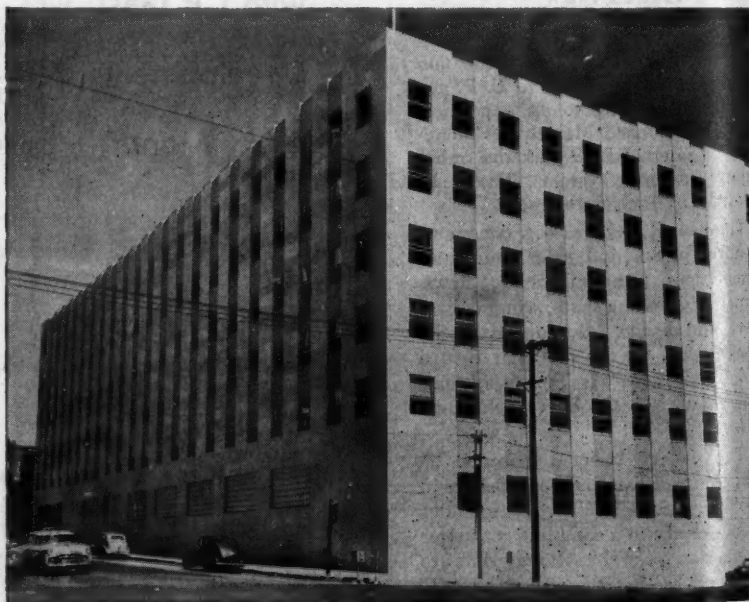
A new angle for promotion of their newly developed water heater glass lining "Crystalglas," is being employed by Bryant Heater; it consists of ashtrays coated with Crystalglas.

It is the company's belief that the simplicity of their presentation of the new product, plus a first-hand demonstration of what they feel to be the superior qualities of Crystalglas, will serve as an effective introduction to the water heating lining.

New Firm Enters Florida LPG Field

A new business opened at 110-112 South 5th St., Leesburg, Fla., recently. The firm, Spencer, Inc., will carry a complete line of gas appliances, and bottled gas.

Fred Spradlin, Dr. B. J. Spencer and W. B. Campfield are the owners of the business.



New home of Sinclair Oil and Gas Co., Tulsa, Okla., recently completed at a cost of \$4,000,000. Headquarters for the L. P. gas division of the company is located in this new structure.

Butane-Propane



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Propane operated lift truck loads cylinders for export shipment at Mutual Liquid Gas Corp., Inglewood, Calif.

Modern Mobile Tanks Are Safe

Obsolete Tanks Should be Brought Up To Modern Specifications—or Junked

By Carl Abell

A FEW months back, in the outskirts of Jackson, Miss., a motor truck powered with LPG was involved in a bad traffic accident. In the vehicular mix-up one of the fuel tanks on the truck was knocked out of its mounting, the curved head on the end that took the impact was dented in nearly two inches, and two of the valves were shaved off almost flush with the shell of the tank. After rolling down the highway for a little distance, the tank came to rest in the drainage ditch beside the road.

Valves Prevent Accident

A few minutes later the tank was picked up by a wrecking crane, and taken to the Moulden Supply Co. shop a little distance up the road, where it was found that the tank was still full of liquid propane. The check valves and excess flow valves had closed instantly, and there had been no fire. Had this same accident occurred to a gasoline powered truck, there is considerable doubt that a conflagration could have been avoided.

Recently, in Los Angeles, a "butane" powered truck was being backed into a loading dock. Through an error in judgment, the drier scraped his right tank against the corner of an adjacent building, knocking off two valves. There were no excess flow or check valves protecting the outlets, and the escape of gas set off a fire which did heavy damage and sent seven people to the hospital. The report of the Los Angeles Fire Prevention Bureau shows clearly that this tank lacked the protective valves recommended in Pamphlet 58, and required by the California code.

The tank was legal when it was installed, but for nearly eight years it has been an outlaw. This incident has resulted in an inspection campaign by the Bureau, and it is hoped that this will lead to the elimination of any other outlaw tanks that may still be in service in the local area. That they are comparatively rare is indicated by the fact that this is the only accident of the kind that has hap-

pened in the Los Angeles jurisdiction since the regulations were revised to require the installation of the protective valves under the tank openings.

As part of the Fire Department's effort to prevent any future recurrences of accidents from this cause, the news letter sent out to its members on September 25 by the California Motor Truck Association contained a report of the accident, an analysis of the recommended preventive measures, and the announcement of the tank inspection program. This report was prepared by Capt. James M. Hammack, head of the Fire Prevention Bureau.

The report is factual, fair, and completely without hysterics. We reproduce it in full, for the benefit of any L. P. gas distributors who are combatting an unfriendly attitude on the part of local regulatory authorities. In this connection it is interesting to know that the commercial application of L. P. gas carburetion originated in the Los Angeles area, and that there are six LPG carburetor factories located in the county. There is probably no other area where the fire authorities have had as great an opportunity to ascertain the facts about the comparative safety of LPG motor fuel as in Los Angeles. Captain Hammack's report follows:

"On the morning of September 17, 1953, a driver attempted to back his 96-inch wide flat bed semi-load of Quebacho into the ten-foot opening between the two buildings located at 912 and 914 East 59th Street, Los Angeles.

"The 1944 model Reo tractor was equipped with two 85-gallon L. P. gas fuel tanks which were interconnected by three-eighths inch copper tubing, leading from each tank to a tee connection and thence to the carburetor of the engine.

"These fuel tanks were manufactured prior to January 1, 1946, and therefore, were equipped with certain valves, fittings and tank openings that would not be acceptable under the codes and regulations employed today. Each tank was provided with eight separate openings:

"Two 1/2-inch soft plugs; one 3/4-

inch service valve without excess flow protection; one 3/4-inch vapor withdrawal and springloaded relief valve; one 10% gauge valve; one rotary gauge valve; one 1 1/4-inch filler valve; one 3/4-inch vapor return valve.

"Both fuel tanks were filled to the legal limit at the time of the accident. In his attempts to negotiate the narrow opening between the buildings, the driver made contact between the fuel tank on the right side of the vehicle and a heavy piece of angle iron which had been used to reinforce the corner of the building. The force of the impact and subsequent scraping effect completely removed the service valve and the vapor withdrawal valve. This provided two openings, each 3/4 inch in diameter, directly through the shell of the tank.

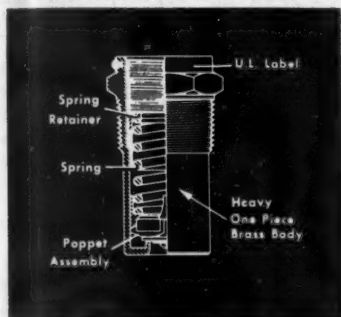
"The tank contents were quickly dispelled about the area and soon reached a source of ignition. This is a congested industrial area and many sources of ignition were possible. The first explosion alarmed the occupants of the district and the fire department was notified. Two more distinct explosions were heard after the arrival of the first piece of fire apparatus. The fire and heat of the first explosion probably caused the soft plugs in the fuel tank on the left side of the vehicle to fuse and release the 85-gallon contents of the tank. The series of explosions were probably due to the pocketing of the L. P. gas in rooms and low places in the buildings and becoming ignited when reached by sufficient heat and vapor concentrations.

Lack of Valves Blamed

"This destructive fire (estimated \$200,000) could have been prevented by the installation of a few inexpensive valves. The Los Angeles Fire Department is recommending to this particular fleet operator that he overhaul his fuel tanks by replacing the soft plugs with steel plugs, provide excess flow check valves in all openings in excess of No. 54 drill size that communicate with either liquid or vapor space, except a springloaded

relief valve. Springloaded relief valve to be installed in the 1½-inch filler opening. The ¾-inch vapor return opening which is no longer used, to be converted to a filler opening and the vapor withdrawal valve to be removed and replaced with a steel plug.

"In the future, operators and drivers may expect to have their units stopped by members of the Los Angeles Fire Department for inspection purposes when such units are operating within the City of Los Angeles. The minimum recommendations for L. P. gas fuel tanks will be: excess flow check valves in all openings in excess of No. 54 drill size, communicating with either liquid or vapor space except the relief valve; that all tanks be equipped with a springloaded relief valve capable of properly relieving internal pressures, to eliminate danger of tank explosion



Pressure relief valves are now made with working parts completely protected inside shell of tank.

under fire conditions; filler openings to be equipped with double back check valves and all unused openings be closed with a steel plug; all safety valves are to be installed inside the shell of the tank.

"Liquefied petroleum gas is a versatile fuel, serving many useful purposes. It should not be condemned or prohibited because of one accident or possible misuse. It should, however, be handled properly, and if so handled it is both safe and useful.

"The old story of the loss of the nail causing the loss of the shoe and finally the loss of a kingdom, has again been exemplified. For a very small investment a \$200,000 loss and the injury to seven people could have been averted."

L. P. gas tanks deteriorate little if any over a long period of years, so there is a natural tendency to go on using them as long as they can be transferred from one vehicle to another. This practice is acceptable, and beyond criticism, as long as the tanks comply with the current code requirements, and are not used for

products having higher vapor pressures than those for which the tanks were originally built.

Code requirements change from time to time, because of technological knowledge based on increased experience, and because of changing products. The code requirements with which we are most concerned in connection with mobile tanks are those which were included in Section IV of NFPA Pamphlet 58 in 1945, and which were generally adopted by the states effective in 1946. Because of the increasing frequency of acci-

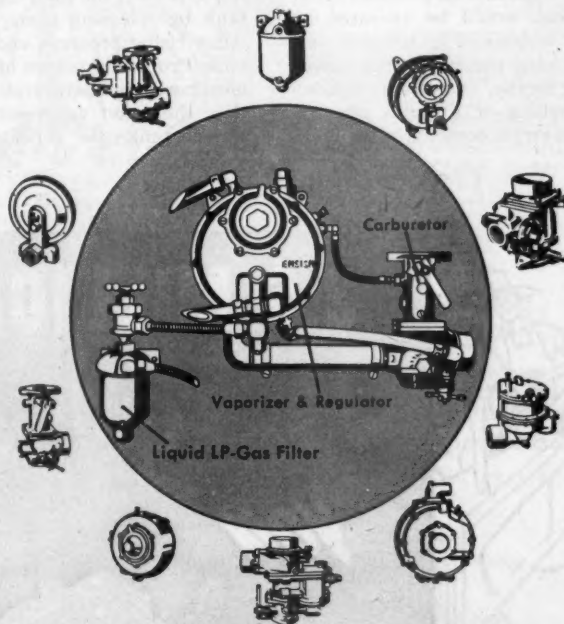
dents exactly paralleling the one discussed above, the Technical and Standards Committee of the Liquefied Petroleum Gas Association proposed, and the National Fire Protection Association adopted, the paragraphs specifying the safety equipment and precautions which should be used in connection with each of the various openings in mobile vehicle tanks.

Up until the time that butane became the leading raw material for conversion into ingredients for synthetic rubber, it had been the prin-

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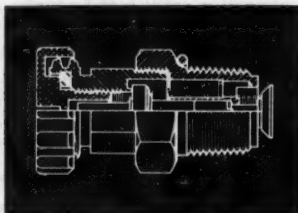
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ciple component of LPG used for motor fuel. As the vapor pressure of butane is comparatively low, tanks with 80 psi maximum working pressure were satisfactory. Pressure vessels must be equipped with devices to relieve the pressure in case it gets too high. In the early days when it was considered that heat was the only condition that would result in excessive pressure in a butane tank, fusible plugs which would melt before butane reached a dangerous pressure were the standard protection against rupture. As we made wider use of propane, which has much higher pressure throughout the temperature range, it became apparent that its storage in butane tanks protected with fusible plugs would be dangerous—it would reach pressure beyond the safe working limits of the tank at temperatures far below the melting point of the fusible plugs. It became necessary to equip the butane tanks with pressure relief valves that would be operated by pressure instead of by temperature. Spring loaded pressure relief valves offered a further advantage—whereas the melting of a fusible plug released the entire contents of the tank,

which might in itself constitute a major hazard, the spring loaded pressure relief valve released only enough fuel to reduce the pressure to that for which the valve was set, and then it closed. Less released fuel meant less hazard of fires and explosions.



Vapor return valve has an excess flow valve at internal end, and check valve at outlet opened by nib in hose connection.

The pressure relief valve is designed and set to protect the tank—not to protect the fuel. It protects the tank by releasing some of the fuel when rising pressure endangers the tank. Propane pressure at normal atmospheric temperatures is higher than the relief valve setting of the butane tank—the relief valve must

be set to open at not more than 25% above the working pressure of the tank, which is 100 psi for an 80 lb. working pressure tank. In order to use propane safely as motor vehicle fuel, we must use a tank of sufficiently high working pressure that the relief valve, set at not more than 25% more than the working pressure of the tank, will not open under normal temperature conditions. We do not want to go down the road with the relief valve popping, and discharging slugs of gas which may ignite from engines, brakes, drag chains, cigarettes, or other vehicles.

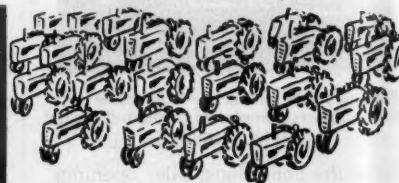
There are still a few butane tanks—80 psi working pressure—in service. They are highly dangerous, because butane, which is the only safe fuel to use in them, is becoming scarce. Most of the fuel available in certain areas is a mixture of butane and propane, and as the percentage of propane goes up, the pressure goes right up with it. Any mixture of L. P. gases is likely to be called "butane" in a service station, and the chances are 100 to 1 that the operator has no idea how much propane may be in the mixture. He puts it in the customer's tank, as a rule, without look-



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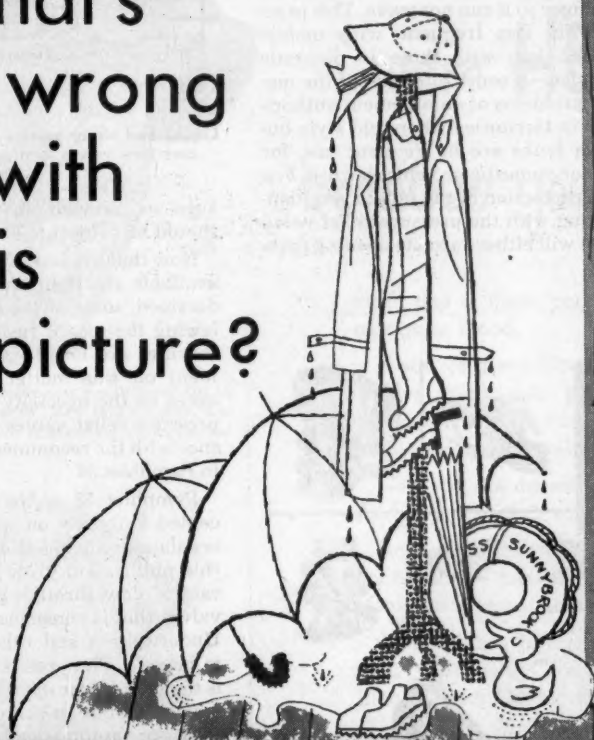
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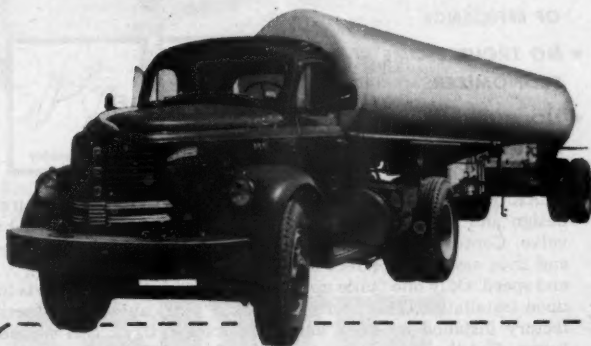
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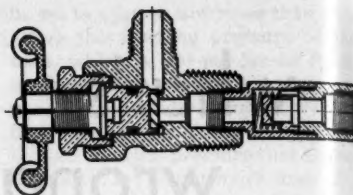
- Reo value-studded trucks with *Gold Comet* LP-Gas engines, 100 hp or 142 hp.
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- Complete Reo *Gold Comet* LP-Gas engines to replace worn and wheezing engines in your present trucks (any make).

ing at the working pressure figure stamped in the manufacturer's plate.

The old low pressure tanks are slowly disappearing from the highway. Now and then a truck is burned up by gas escaping from the low pressure tank. This always makes a few more operators smart, and they change to 200 psi working pressure tanks. These are designed for use with propane, and will hold any mixture safely, because the mixtures have lower pressures than propane.

Now and then an operator gets too smart, and figures that he can, go on

using the butane tank by screwing down on the pressure relief valve—it is adjustable within limits, or it may be made inoperative by wedging the plunger so it can not move. This practice is less frequent with mobile tanks than with those in domestic service—it constitutes one of the major problems of enforcement authorities in territories where old style butane tanks are in frequent use, for either domestic or vehicular use. For the protection of the public, any tampering with the pressure relief valve that will either raise its opening pres-



Liquid and vapor service valves have excess flow valves located inside tank.

sure or prevent it from opening should be subject to severe penalties.

Now that pressure relief valves are available and their use is widely understood, some of the states are outlawing the use of fusible plugs. Authorities are not in universal agreement on this matter, but they do agree on the necessity for the use of pressure relief valves set in accordance with the recommendations listed in Pamphlet 58.

Pamphlet 58 is the generally accepted authority on which the state regulations are based. In Appendix A this publication gives the minimum rate of flow through pressure relief valves that is considered by the Fire Underwriters and other authorities to be safe. The pressure relief valve is the only major opening in the tank which can not be protected by some form of automatically closing internal valve, and hence it must be so located and protected as to minimize the possibility that it will be broken open in normal use or in an accident. The type of pressure relief valve which was in general use until just recently had its working mechanism outside the shell of the tank. The type now in general production for mobile tanks is built with all working parts located inside the tank, with no external projections except the hex section that is provided for screwing the valve in place, and in some cases a short threaded section to permit the attachment of a vent stack. This internal type valve is safer because it eliminates any possible hazard of damage from an accident affecting the surface area of the tank.

In specifying the types of valves for the other major openings of the mobile tank, Pamphlet 58 arrives at some form of double protection for each major outlet through which a hazardous amount of L. P. gas might escape in an accident.

It states that "the filling connection shall be fitted with an approved double back-pressure check valve, or a positive shut-off in conjunction with an internal back-pressure check valve. On a removable container (such as an ICC cylinder) the filler valve may be a hand operated shut-

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A tornado whipped suddenly across her home town. She was badly injured by falling debris. But a quick operation, several transfusions pulled her through. She thanks you for her life.

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 because you were **THERE!**"

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If you've given blood before, you know how easy it is—how quick and painless. And you know what a wonderful feeling it is when you realize that what you've done may give another person his life.

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| <input type="radio"/> DO YOU HAVE A BLOOD DONOR HONOR ROLL IN YOUR COMPANY? | <input type="radio"/> WAS THIS INFORMATION GIVEN THROUGH PLANT BULLETIN OR HOUSE MAGAZINE? |
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| <input type="radio"/> HAVE YOU SET UP A LIST OF VOLUNTEERS SO THAT EFFICIENT PLANS CAN BE MADE FOR SCHEDULING DONORS? | |

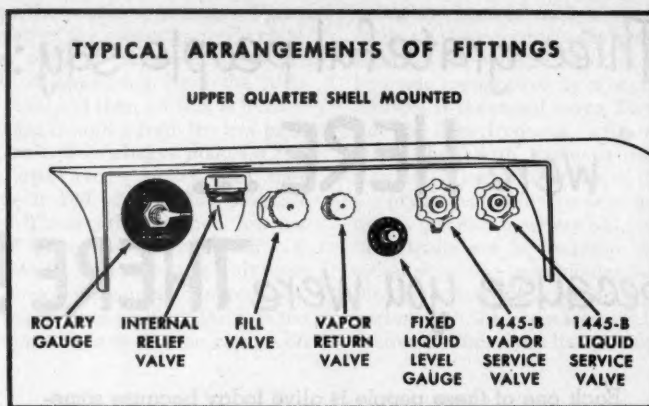
Remember, as long as a single pint of blood may mean the difference between life and death for any American . . . the need for blood is urgent!



NATIONAL BLOOD PROGRAM

GIVE BLOOD

...give it again and again



Valves and fittings on mobile tank should be protected by a substantial guard.

off valve with an internal excess flow valve."

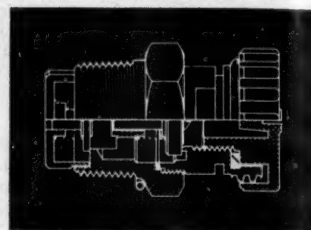
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The protective valve for these openings is the "excess flow valve," a special valve designed to remain open during normal withdrawal of fuel for use, or in the vapor return valve, during the filling operation. When unusual situations arise which cause or permit the flow of more than the normal amount of fuel, the inertia of the passing vapor or liquid snaps the excess flow valve shut automatically, and it remains closed until the external means of escape is closed



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Another ALGAS Achievement!

MODEL 1900 CONVERTER For LP-Gas For Internal Combustion Engines Up to 75 H.P.



Model 1900 Converter
with Electric Primer

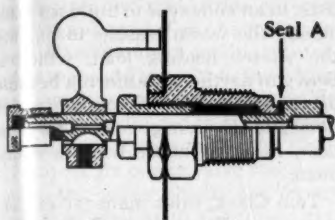
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Capacity: 7½ gal. of
liquid fuel per hour,
or 75 H.P.

Provides ALGAS ex-
clusive, two-stage
heating.

Write for complete
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Bleed valve on rotary gauge may not be larger than No. 54 drill size. No internal valve required.

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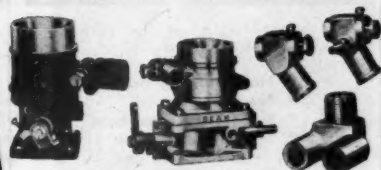
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Superior Performance

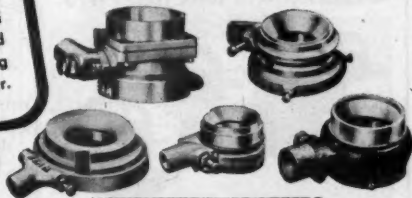
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BEAM equipment is noted for its extreme simplicity and compact design, resulting in quicker, more profitable installations, with a minimum of service required over the years. Whatever your preference of carburetor — adapter style, straight LP carburetor, or spud-in — the BEAM line contains them all. Only one hose is required between the regulator and carburetor. Two simple adjustments — idle and load settings — do the entire job, and no special technique, such as priming or choking, is required of the driver.

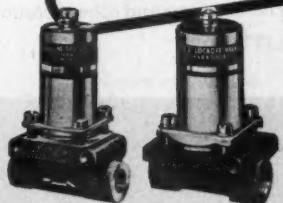


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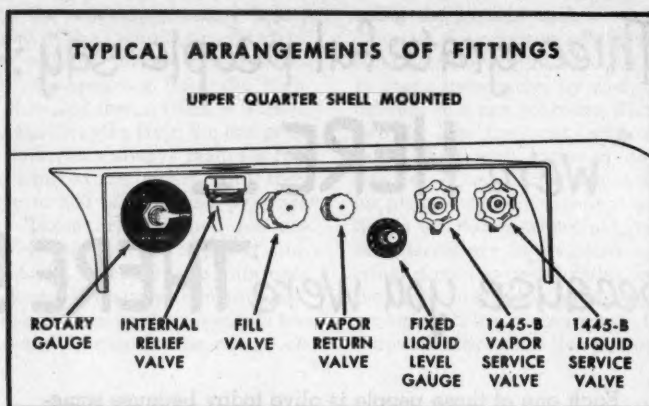
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Valves and fittings on mobile tank should be protected by a substantial guard.

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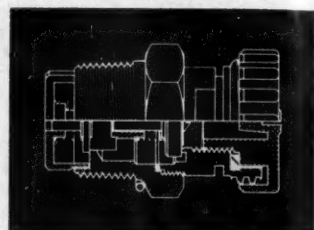
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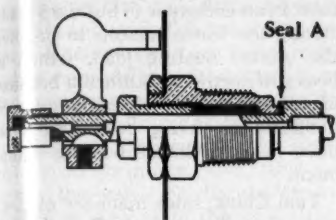
Provides ALGAS exclusive,
two-stage heating.

Write for complete
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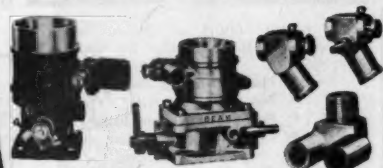
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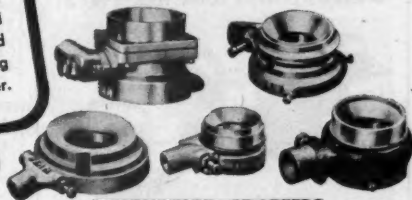
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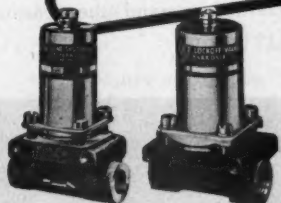


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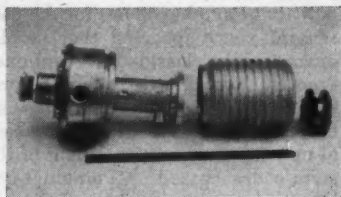
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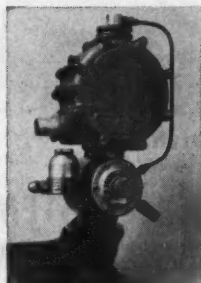
L. P. Gas Motor Service
East Palatka, Florida

WELL, WHAT IS THIS?



This is the insides of the compact new brass bellows vaporizer developed by J&S Carburetor Company. We thought we'd let you see its vital parts as we know you'll be seeing lots of them in various housings in the next year.

SOME will look like THIS:

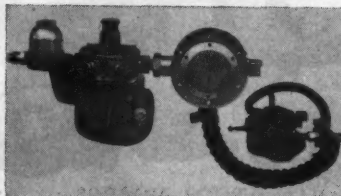


New J&S
Ford V8
Conversion
Unit

It mounts right on the cylinder head in place of the thermostat housing.

- No mounting bracket
- No holes to drill
- No extra water hose
- Carburetor section spudded for gas
- Compact, light-weight

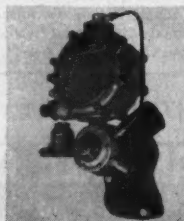
OTHERS will look like THIS:



J&S 1953 Ford Tractor Kit

AND THIS:

New J&S
Unit for
IHC Red
Diamond
Trucks



We have several other new kits you can get from our distributors, or direct from

J & S Carburetor Co.

Box 10391, DALLAS 7, TEXAS

prevent the reinstallation of old low pressure tanks or those with obsolete valving on new vehicles.

It is doubtful if operators would be willing to use tanks which present avoidable hazards with today's fuels if they knew the chances they are taking. An explanation of the facts has nearly always resulted in prompt correction of the condition. Whether the correction involves replacement of valves or the sale of complete new tanks, somebody makes a profit on the sale, and the industry benefits from the elimination of another accident hazard. And while it has not been mentioned above, there are obsolete tractor tanks in service that need modernizing or replacement.

Carburetion School In California

California Liquid Gas Corp., Sacramento, Calif., wholesale distributor serving more than sixty retail distributors in northern California, provided intensive training in carburetion sales, installation and service through a series of three one-day schools held on September 24, 25, and 26.

The purpose of the schools was to familiarize the dealers with the Century line of L. P. gas carburetion, for which an affiliated company, Cal-Gas Equipment Corp., is northern California distributor, and to supply training in effective sales methods. About 75 dealer representatives attended, besides several equipment representatives handling related lines.

Special emphasis was placed on the application of L. P. gas carburetion to farm power and other seasonal

uses, in an endeavor to build up loads during the warm seasons to balance the winter heating load, which is heavy in northern California because of exceptionally high percentage of domestic cooking customers who have installed house heating equipment.

Tom Clark, sales manager of Century Gas Equipment Co., carried most of the burden of instruction of the three sessions, which occupied the afternoons and evenings of the three days.

Preventing Gasoline Gum Troubles In Dual Vehicles

Operators carrying gasoline as reserve fuel in converted vehicles should remember that when held in contact with air for too long a period, gasoline goes "sour," and develops gummy compounds which deposit in critical areas in the engine and cause various sorts of trouble.

This may be prevented by using up the reserve supply at frequent intervals, and replacing it with fresh gasoline.

The formation of the gummy compounds is an oxidation process, which takes place slowly at first, but accelerates as the amount of gum increases, so the rate of formation after a few months becomes very rapid. Rate of oxidation is also influenced by temperature, the rate of gumming being higher in summer than in winter.

In the first stages, the gum remains in suspension in the gasoline, but after a considerable amount has been formed, it may precipitate as a jelly-like layer adhering to the submerged surfaces of the gasoline tank. When exposed to heat in passing through



About 76 dealer representatives attended the recent carburetion school sponsored by California Liquid Gas Corp. Intensive training in sales, installation and service was provided.

the engine, the gum dries out very rapidly, and settles on the metal surfaces. If temperature conditions in the intake manifold are within the critical range, a heavy coating forms on the inside, gradually reducing the manifold capacity. Deposits are also likely to form on the intake valve stems and under the valve heads, and in the guides, as well as in the piston ring grooves and on the piston surfaces. Cleaning up an engine in which heavy gum deposits have been allowed to form requires disassembly of the affected parts, and cleaning with strong solvents. In the early stages of gum formation, treatment by pouring gum solvent through the carburetor may be effective.

Prevention is always better than cure, so it is suggested that the reserve of gasoline in the car tank should be used up about every three months during cool weather, and every 60 days from spring to fall. It has also been noted that gum formation takes place more slowly in a full tank than in one with a low fuel level. The full tank contains very little air, so there is very little oxygen exposed to the gasoline.

L. P. gas does not produce any gum comparable to that which develops in gasoline, for one very good chemical reason—it is never exposed to air long enough for this type of oxidation to take place.

Keep Two-Way Radios Away From Blasting Caps

Blasting caps have been set off by radio frequency energy from a number of sources, including two-way mobile transmitters with outputs as low as 15 watts, without any physical connection to the blasting circuit. The induced current is able to fire the caps through a gap of several feet between the transmitter and the caps or blasting circuit.

This information is given in the September news letter of the Petroleum Section of the National Safety Council. Recommended safety precautions adopted by the Forest Service of the United States Department of Agriculture, and others, include instructions not to use the radio transmitter within 300 feet of any electric blasting.

Drivers of vehicles equipped with two-way radio should bear this in mind when negotiating highway construction zones, and when working in the vicinity of mines, quarries, seismological exploration crews, and other locations where preparations for blasting may be taking place. The

radio should be kept turned off until the vehicle is well out of the danger zone. Carelessness in this respect might cost the lives of people in the vicinity of the blasting charges.

Recent cooperative studies by DuPont and several radio manufacturers have determined the following minimum distances for use of electric blasting caps near transmitting equipment.

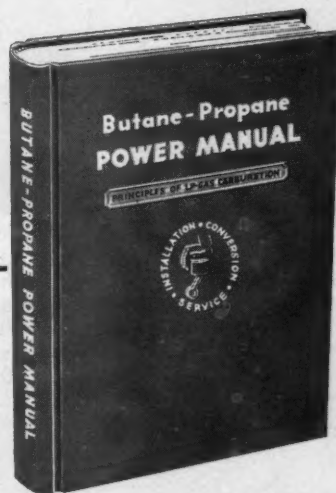
Transmitter Power (Watts)	Minimum Safe Distance
5 - 10	100 ft.
100 - 250	300 ft.
250 - 5,000	¼ mile
5,000 - 25,000	½ mile
25,000	1 mile

This table is based solely on transmitter power and is conservative even for the worst possible conditions.

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Butane-Propane POWER MANUAL

Published by
BUTANE-PROPANE News



Here is the first authoritative guide ever published for the rapidly expanding LPG power market. Basic facts of engines, fuel, and power are given in easy-to-understand language; then careful directions and clear illustrations take you step-by-step through installations, conversions, servicing . . . everything needed in a practical working manual for practical men. Nearly 5,000 copies of the BUTANE-PROPANE POWER MANUAL have already been sold.

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1. The Nature of L. P. Gas
2. Basic Engine Facts
3. Basic Facts of Fuel Combustion Engines
4. Factors Affecting Operating Economy and Power
5. L. P. Gas Carburetion Systems
6. Regulating Gas Pressure and Temperature
7. Fuel Supply System, Vehicle Tanks and Equipment
8. Natural Gas Carburetion
9. Planning the L. P. Gas Installation
10. Checking the Engine's Condition
11. Raising the Compression Ratio
12. Cooling the Intake Manifold
13. Ignition Problems
14. Tractor Conversions
15. Truck and Bus Conversions
16. Passenger Car and Taxicab Conversions
17. Industrial Engine Conversions
18. Installing and Adjusting L. P. Gas Carburetion Systems
19. Manufacturers' Instructions for Adjusting L. P. Gas Carburetors
20. Lubrication of L. P. Gas Engines
21. Trouble Shooting
22. Safe Storage and Handling of L. P. Gas
23. Selling L. P. Gas Carburetion Appendix (including Definitions)

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BUTANE-PROPANE News, 198 S. Alvarado St., Los Ang. 57, Cal.

MANCHESTER

LPG TANK ASSEMBLIES

...fit perfectly, look neat, and are easy to install—without a lot of drilling or other special work on the job. All the hard work is taken out at the factory by engineering the conversion tanks, brackets and all, to match each of the popular tractor models.

Below are a couple of typical installations on late model tractors.



1953 model John Deere "60" tractor showing a Manchester 35-gallon L.P. Gas tank installed in place of the gasoline tank. Tank mounts low on tractor and is built with a sleeve for the steering shaft. Tanks are also available for the John Deere "50" and "40" models.



1953 model "M" Farmall tractor showing the Manchester 37-gallon L.P. Gas tank which mounts in the same way as on the factory-equipped tractor.

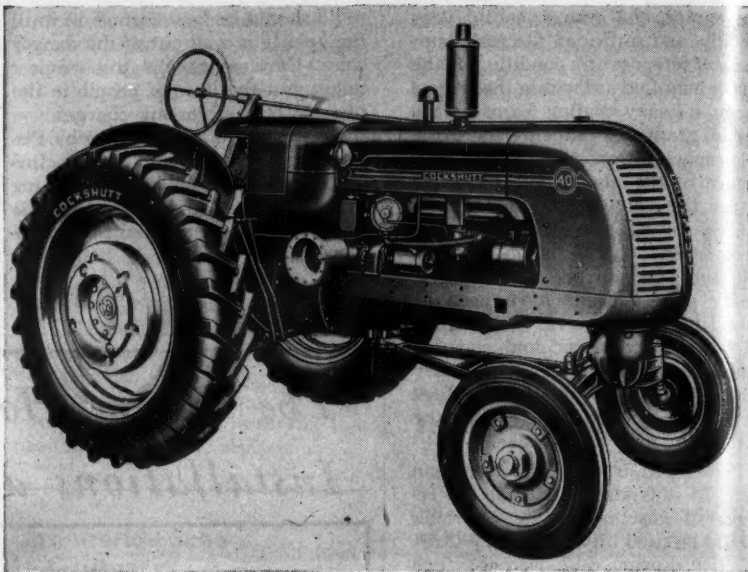
Tank is so designed that it is not necessary to cut the hood or make any changes to present brackets. Filler valve is located on top side of tank for easy filling from the ground.

Write for our Tractor Tank Installation Manual

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PHONES: NE 1-9357 NE 6-2839



Firm Introduces Two LPG Tractors

Cockshutt Farm Equipment, Ltd., of Brantford, Canada, has announced the availability of two models of LPG-

equipped tractors for the Canadian market. These are the "LPG 30" in the 2-3 plow size, and the "LPG 40" in the 3-4 plow size.

The engineering features of the tractors and the complete fuel systems conform closely to the standards adopted by manufacturers in the United States. Fuel tanks include all of the customary valves and fittings, and the carburetion units are supplied by Century Gas Equipment Co., Lynwood, Cal.

The "LPG 30" is equipped with a 4-cylinder valve-in-head Buda engine of 153 cu. in. displacement, and the "LPG 40" has the corresponding model of 6-cylinder design, with the same bore and stroke as the 4-cylinder job. Pistons, connecting rods, bearings, cylinder liners, and the entire valve mechanisms are interchangeable in the two engines, thus simplifying the service problem and holding down the cost of replacement parts.

Cockshutt agencies are being supplied with three color mailing pieces which introduce the new models and present a potent sales story for the use of L. P. gas as tractor fuel.

New Piston Ring Sets By International Harvester

The motor truck division of International Harvester Co. is making available through its nationwide parts supply system chrome-plated "2-in-1" piston ring sets in the most popular sizes for International Green, Silver, Blue, Black and Red Diamond engines.

HI-CO headquarters for LP-GAS TRACTOR MANIFOLDS

AVAILABLE FOR



FARMALL: "M", W-6, I-6, T-6, U-6, "H", W-4, I-4, U-4, F-20, and F-30



JOHN DEERE: A, B, G, and D



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Write or wire for FREE literature and prices.
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HI-COMPRESSION PRODUCTS COMPANY
WASHINGTON, IOWA



STATEMENT REQUIRED BY THE ACT OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) SHOWING THE OWNERSHIP, MANAGEMENT, AND CIRCULATION OF

BUTANE-PROPANE News, published monthly at Los Angeles, California, for October 1, 1953.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, Jay Jenkins, 198 So. Alvarado St., Los Angeles 57, California; Executive Editor, Lynn C. Denny, 198 So. Alvarado St., Los Angeles 57, California; Editor, Carl Abell, 198 So. Alvarado St., Los Angeles 57, California.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)

Jenkins Publications, Inc., 198 So. Alvarado St., Los Angeles 57, California. Jay Jenkins, Ida Jenkins, Helene Jenkins, Eloise Jenkins, 198 So. Alvarado St., Los Angeles 57, California.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. Paragraphs 2 and 3 include, in cases where the stockholders or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

JAY JENKINS, Publisher.

Sworn to and subscribed before me this 18th day of September, 1953.

(Seal) DOROTHY B. NEWLON,
Notary Public.

In and for the County of Los Angeles, State of California.

(My commission expires Nov. 2, 1956.)

BALANCE YOUR LOAD

During the Winter Months is the Time to

Convert Tractors!

Help your farmer friends NOW, while their tractors and other farm machinery is idle or little used—it will return *big dividends* to you next spring and summer when you need extra gallonage to balance your year 'round sales volume. The time to lick the summer slump is during the winter months!

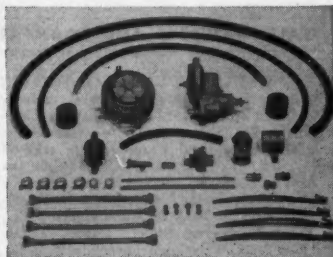
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Let us help you, Mr. Dealer, to balance your summer-winter load. Write now for special illustrated catalog and other data describing how you can increase sales volume with DIX LPG CARBURETION.



DIX MANUFACTURING CO.

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- ★ L.P. fittings and regulators, valves.
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- ★ Propane hose, L.P. pumps, all accessories.

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UNIVERSAL PRODUCTS, INC.

LPG Carburetion Division
6918 Lindberg Street, Houston 17, Texas



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Display-classified advertising rates can be secured by writing publisher. For regular classified advertising, set in 7 point type without border or display, the rate is \$1.00 per line per insertion. Count each letter and space between words and allow 46 letters and spaces per line. Minimum charge is \$3.00 per insertion. Classified advertising payable in advance. Copy and payment must reach publisher's office prior to fifth of month preceding date of publication.

HELP WANTED

HELP WANTED?

A COMPANY SEEKING A BRANCH MANAGER AND a salesman got 38 replies from one ad in the classified columns of BUTANE-PROPANE News... THE PLACE TO ADVERTISE FOR WHAT YOU WANT.

OUR PREFERENCE IS TO WORK WITH experienced L. P. G. men. Write us. Oil Industry Employment Service, 405 Tuloma Bldg., Tulsa, Okla.

WANTED: ONE MAN TO MANAGE LPG bulk plant located in Southeast; another to manage bulk plant in Midwest. Excellent positions for men having proper qualifications. Write, giving age, experience, references. Write Box 465, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

HELP WANTED: INSTALLATION MAN experienced in service and installing gas equipment. Steady job, excellent working conditions. Give experience and references. WESTERN GAS & POWER CO., 7909 E. Sprague Ave., Spokane, Wash.

BUSINESS OPPORTUNITIES OFFERED

FOR SALE: L. P. GAS, PETROLEUM products, equipment and implement business. LPG business doing over million gallons per year. Petroleum products contract with major oil company with two local stations with three more to be built. Contract covers seven surrounding counties. Equipment business is on a jobber basis for L. P. gas and automotive. J. I. Case business is good as it is the most popular tractor in the area. Building and new home is less than a year old located in town of 10,000 with business in Oklahoma, Texas, New Mexico, Colorado and Kansas. Approximate price: \$150,000. Write Box 475, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

DISTRIBUTOR TO TAKE OVER GOING propane business in Oregon. Investment required for trucks, inventory, etc. \$15,000.00. Yearly sales: 400,000 gallons. Necessary facilities for complete operation provided. Write Box 440, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

UP AND COMING L. P. GAS BUSINESS in the Southwest. Newly discovered irrigation district, seventy wells drilled last year, another hundred to be drilled before another season. Priced to sell, for health reasons. Will pay you to take a look, if wanting a good business. Write Box 470, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

FOR SALE: RETAIL BOTTLE GAS BUSINESS. Gas Sales: \$27,237.29; Merchandising: \$13,866.28 in 1952. Two cylinder trucks, 54,000 gallon storage to draw from. Over 400 customers. Company owns all the cylinders. Write Box 460, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, California.

BUSINESS OPPORTUNITIES WANTED

HOW TO FIND A BUYER

You can do it quickly, inexpensively with a classified ad in BUTANE-PROPANE News. Box 145 got 28 replies to his \$11 ad — less than 40¢ a reply!

WILL BUY L. P. GAS BUSINESS, 2000 customers or larger, with or without storage; should be located where further expansion is possible. Write Box 385, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

CONTACT US TODAY TO BUY OR SELL a gas business. We cover all states east of the Miss. River—from Minnesota to Maine to Miami. We're in Florida because it's a good place to live—it's easy to reach you from here. Today we have a Miami company for \$110,000 cash; central Tennessee for \$270,000 terms; west coast Florida for \$275,000 terms. SALES, APPRAISALS, FINANCING. MEMBER LPGA and AGA. EDWARD R. GOUDIE INC., Box 1177, Stuart, Florida. Tel.: 450.

FOR SALE—TRUCKS AND TRAILERS

NEW: IMMEDIATE DELIVERY. 1400 WG U69 propane lightweight twin barrel delivery unit. Mounted on new 1953 2-ton, 2-speed Chevrolet truck. Fill and vapor hose assemblies—Viking Mechanical Seal Pump—power take-off assembly. READY TO GO FOR \$3845.00 tax paid. Also available at low extra cost: meters—fire extinguisher—motor fuel tank and L. P. carburetion. American Tank & Manufacturing Co., 2136 West Commerce Street, Dallas, Texas. P. O. Box 5525. Telephone Riverside 9183.

NEED A WORKHORSE? WE HAVE NEW 1953 Model 353 GMCs; 2 ton, 2 speed, w/8:25 tires equipped with a 1400 WG Nor-Tex Standard Twin Propane unit. It's skirtd, plumbed and perfectly balanced! Complete with recessed fuel tank, Viking KK190 pump with mechanical seal, 50' filler hose, ICC lights and power take-off with spline—jack shaft. Finish is aluminum paint over red oxide. Tax paid and ready to go. \$4043.80 FOB North Texas Tank Co., Box 519, Phone Central 5416, Denton, Texas.

A PACKAGE UNIT SPECIAL! A NEW 1953 2 ton, 2 speed Chevrolet equipped with a 1250 WG Nor-Tex Standard Twin Propane Unit. It's skirtd, plumbed and perfectly balanced! Complete with recessed fuel tank, Viking KK190 pump with mechanical seal, 50' filler hose, ICC lights and power take-off with spline jack shaft. Finish is aluminum paint over red oxide. Tax paid and ready to go \$3919.85 FOB North Texas Tank Co., Box 519, Phone Central 5416, Denton, Texas.

TWO USED PROPANE DELIVERY trucks. 1947 Ford 1250 gals. 1946 Ford 1000 gals. Your choice \$1800.00. Both complete ready to deliver fuel. Smith pumps, Pittsburgh Meters, 50 ft. hoses, 250 lb. W.P. tanks. Valley Butane and Appliance, Merced, California, Phone RAndolph 2-5661.

FOR SALE—TRUCKS - Cont.

SPECIAL: AMERICAN "BETTER-BILT" lightweight 1400 water gallon U69 propane twin barrel delivery unit, with Viking Mechanical Seal Pump—Neptune Print-O-Meter—fill and vapor hose assembly—mounted on new 1953 2-ton, 2-speed GMC; 125 hp engine with 8.25 tires—READY FOR SERVICE. PRICED AT \$4475.00 tax paid FOB Dallas. Other sizes available at comparable low cost. American Tank & Manufacturing Co., 2136 W. Commerce Street, Dallas, Texas. P. O. Box 5525. Telephone Riverside 9183.

PERFECTION PLUS! A NEW 1400 WG twin Trinity model #103 propane unit with double door rear compartment, housing Neptune #433 Print-O-Meter and remote control Okadee valves; excise tax paid, KK190 Viking pump, PTO&DS, plumbing, ICC and directional lights, fuel tank, filler hose, white enamel, mounted on 1953 2-ton 2-speed F-600 Ford or #6400 Chevrolet chassis. \$4550.00 FOB Trinity Steel Co., Inc., 3301 S. Lamar, HUNTER 8321, Dallas, Texas.

SPECIAL—ONE ONLY NEW 46" DIA. 1000 WG single barrel propane unit, fully skirtd with double door rear compartment, fuel tank, KK190 Viking pump, plumbed, ICC light, filler hose, PTO & DS, tax paid, white enamel, ready to go on new 1953 2-ton 2-speed Chevrolet chassis. \$3450.00 FOB Trinity Steel Co., Inc., 3301 S. Lamar, HUNTER 8321, Dallas, Texas.

FOR SALE—1951 F6 FORD 2-ton, 2-speed, 8.25x20 tires, completely overhauled. Six-month-old 1350 Eaton twin tanks, complete. \$2950.00. Southwest Gas Equipment Co., Liberal, Kansas.

FOR SALE 4100 GALLON PROPANE TRANSPORT Tandem axle, lightweight steel, third tank can be added. Ready to travel: \$4650.00. Southwest Gas Equipment Co., Liberal, Kansas.

TRANSPORT. 1947 DELTA TRAILER, twin-barrel 4228-W-9 capacity. 1947 RD-450-K-11 International tractor, propane equipped. Good condition, new tires, power take-off. Priced for quick sale. Mid-State Bottled Gas Co., New Haven, Kentucky. Tel. 66-J.

PROPANE TANK TRUCK FOR SALE. 1952 International L-160, 2-speed, 825x20 10-ply tires, excellent condition with only 23,000 miles, complete with BRAND NEW 1400 gal. twin Nor-Tex tank, no plumbing. Only \$2395.00. Can furnish any make pump, meter and pipe to your specifications at extra cost. White River Distributors, Inc., Batesville, Ark.

1952 INTERNATIONAL L-160, 825x20, 10-ply tires, heater, Ensign carburetion, 1400 gal. twin Nor-Tex tank, pump, meter, hose, piped complete, ready to use. This truck is only 12 months old with 16,000 miles. Save \$1000.00 at \$3750.00. White River Distributors, Inc., Batesville, Ark.

NEED A NEW PROPANE DELIVERY Trucks? We have them, with or without the tank. Several models to choose from. Buy your truck from a dealer in the gas business. WE SAVE YOU MONEY. See our display ad in this issue. White River Distributors, Inc., Batesville, Ark.

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FOR SALE — TRUCKS - (Cont'd)

PROPANE TRANSPORT TRUCK AND trailer. 1947 Reo with late model 150 HP White engine, three-speed Brownline transmission, Ensign carburetion, Westinghouse air brakes, power take-off, Smith MC3 pump, 10:00 x 20 rubber, 2315 WG propane tank. 1947 Utility trailer with 10:000 x 20 rubber and 3450 WG propane tank. Price \$7,000.00. Rockgas Service Co., Inc., 201 Highway 80, El Cajon, California.

FOR SALE: 5200 WG TRANSPORT, Tandem axle, 1100x20 tires, lightweight steel built in 1951. Price \$5600.00. Southwest Gas Equipment Co., Liberal, Kansas.

FOR SALE — TANKS AND CYLINDERS

CYLINDERS ICC, 4B240. BRAND NEW. 100 lbs. capacity, TW 70 lbs. \$13.95, valve extra. Also 20 lb. capacity with Rego valve complete, \$9.45. Lower prices for large quantity orders. A complete stock of regulators and fittings for immediate shipment. F. O. B. Cleveland, Ohio. Home Gas Equipment Co., 1301 Carnegie Ave., Cleveland 15, Ohio.

FOR SALE — IMMEDIATE DELIVERY! 1460 twin tanks \$1025.00 plus federal tax and fittings. Southwest Gas Equipment Co., Liberal, Kansas.

USED PROPANE CYLINDERS, ICC, Specially designed for horizontal use as LPG tanks for delivery trucks with propane carburetion. Twelve inch diameter; 49" long; 77# capacity. Complete with four valves. Subject to prior sale. \$15.00 each; lots of 25 or more, \$10.00 each, FOB Omaha. Omar, Inc., 1910 Harney, Omaha, Nebraska.

FOR SALE — 18,000 GALLON PROPANE tank with fittings, completely degassed. \$6200.00. J. Robert Bazley, Inc., P. O. Box 117, Pottsville, Pa.

FOR SALE—12,500 GAL. PROPANE STORAGE tank. Manufactured in Sept. 1947 by American Pipe and Steel Corp. Condition like new. Must move immediately for more room. Will sacrifice for \$3000.00 if sold immediately. Blythe Butane-Propane Gas Service, P. O. Box 496, Blythe, Calif.

FOR SALE: ONE (1) 25,000 GALLON BUTANE storage tank. \$1000.00. Write Box 460, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

GOING OUT OF TRACTOR BUSINESS!! Selling at sacrifice. Our loss—your gain!! All popular size and model tanks. All tanks new, fitted complete, made to U-69 code. All tanks selling for only \$47.50. Allis-Chalmers WC; Case LA, DC; Farmall F20, F30, M and H; Ferguson, Ford, International W-6; John Deere B and D; Massey-Harris 30, 44 and 101; Minneapolis-Moline UTU, GTB, Z and ZA; Oliver 70, 88, 90. Send order to: National Carburetion Co., P. O. Box 3075, Phone 315, Shawnee, Okla. Shipped anywhere, freight prepaid. Buyer pays price of tank and COD charges only.

FOR SALE—MISCELLANEOUS

GALVANIZED HOOD, STAND, AND BASE to protect your two cylinder installation; \$5.45 each. Packed 10 to a carton. Also Rego or Fisher 2-cylinder regulator, T block, and 2 pigtail at \$4.65 each. Sold on satisfaction or money refunded. Home Gas Equipment Co., 1301 Carnegie Ave., Cleveland, Ohio.

COPPER TUBING—3/4" OD X .032 WALL—50 ft. coils, lots of 10 or more \$5.35 per coil. Less than 10 add 50c per coil. Freight prepaid on 20 or more coils. Home Gas Equipment Co., 1301 Carnegie Ave., Cleveland, Ohio.

FREE FREE FREE With purchase of six (6) "Leak Detector Brushes" at \$3.75 each, Free: one gallon Beeto Solution. For limited time. Gas Appliance Stores, Inc., Box 5057, Columbia, S. C.

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FOR SALE—MISC. - Cont.

FOR SALE—IMMEDIATE DELIVERY! Eureka Smokehouse Burner Assemblies! For meat smoke houses using bottled gas. Completely automatic. Clean filtered smoke. Distributes heat uniformly. Low gas consumption. Automatic temperature and pilot control. Less product shrinkage. Easily installed. Write for descriptive pamphlet. Eureka Equipment Company. P. O. Box 396, Beloit, Wisconsin.

BAKER ALCOHOL PUMPS FOR HY-draulically injecting alcohol into any size cylinder against any propane pressure. Saves draining moisture-contaminated tanks, changing regulators! Pays for itself on several calls. Used by the leading gas dealers throughout the U. S. and Canada. A "must" tool for underground systems. Be ready for your next freeze-up. Order today. Send check or M.O. for \$44.95 for pump, complete with fittings. BAKER ENGINEERING, MALONE, N. Y.

ALUMINUM CYLINDER PAINT. EXTRA heavy body, long lasting, 10 minute drying, for spray or brushing. List price \$4.30 per gallon. Your cost \$2.85 per gallon. Freight prepaid in lots of 20 gallons or more. Finest quality paint you can buy for bulk tanks or cylinders. Home Gas Equipment Co., 1301 Carnegie Ave., Cleveland 15, Ohio.

EQUIPMENT WANTED

CYLINDERS WANTED. PROPANE 100 lb. ICC used cylinders, quote age, condition and price. WESTERN GAS & POWER CO., 7909 E. Sprague Ave., Spokane, Wash.

PROFESSIONAL SERVICES

LET MY LP EXPERIENCE WITH OVER 100 operating properties increase your profits. Floyd F. Campbell, Management and Sales Consultant, 821 Crofton Ave., Webster Groves 19, Missouri.

INDIVIDUALLY DESIGNED BULK PLANTS

H. Emerson Thomas & Assoc., Inc.
Westfield, N. J.

Arkansas Foundry Co. Holds Sales Clinic

More than 100 representatives from 72 different companies attended the recent sales clinic held by the butane-propane division of the Arkansas Foundry Co. in Little Rock.

Speakers at the clinic included: Frank DeVoe, Phillips Petroleum Co.; Bob Allen, Squibb-Taylor Co.; Charles Corken, Corken's, Inc.; Don McNall, Roney, Inc.; "Skeet" La Due, Gas Equipment Co.; Carl Matthews, LP-Gas Credit Corp.; Louis M. Freedom, Neptune Meter Co.; Otis Cash, president, Arkansas LPG; and Fred I. Brown, J. D. Charton and John Allen, Arkansas Foundry Co.

Due to the enthusiastic response to the "clinic" plans are under way to make it an annual affair.

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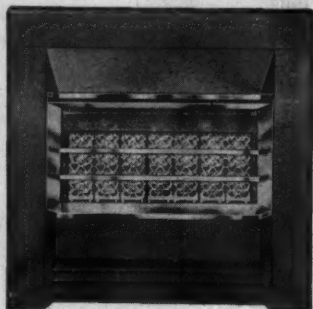
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SAVE \$7.30 on this SPECIAL TWO TANK HOOKUP



**NEW
LOW
PRICE
\$9.55**

in lots of 10

In answer to the many requests of our customers for a packaged deal we are making this special offer with a low price of only \$9.55, in lots of 10. The two tank package consists of one Rego regulator—57145, 2 pigtails, T check & bracket and complete hood assembly. Our regular price—\$10.28 (\$4.83 for Regulator, \$5.45 for Stand). You save \$7.30 as sold in lots of 10.

HOME GAS EQUIPMENT CO.

Dept. 28, 1301 Carnegie Ave.
Cleveland, Ohio

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